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DOMESTIC ENGINEERING

PUBLISHED AT
PRAIRIE AVENUE
CHICAGO

Roll Up Our ...and Forget ...ics
PAGE 35

...eets D.T.U. and ...n Store Compe- ...n (See Photos on ...)
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...0.00 Is the Total ...e of Awards To ...iven in the Sec- ...FHA Prize Cam- ...n
PAGE 42

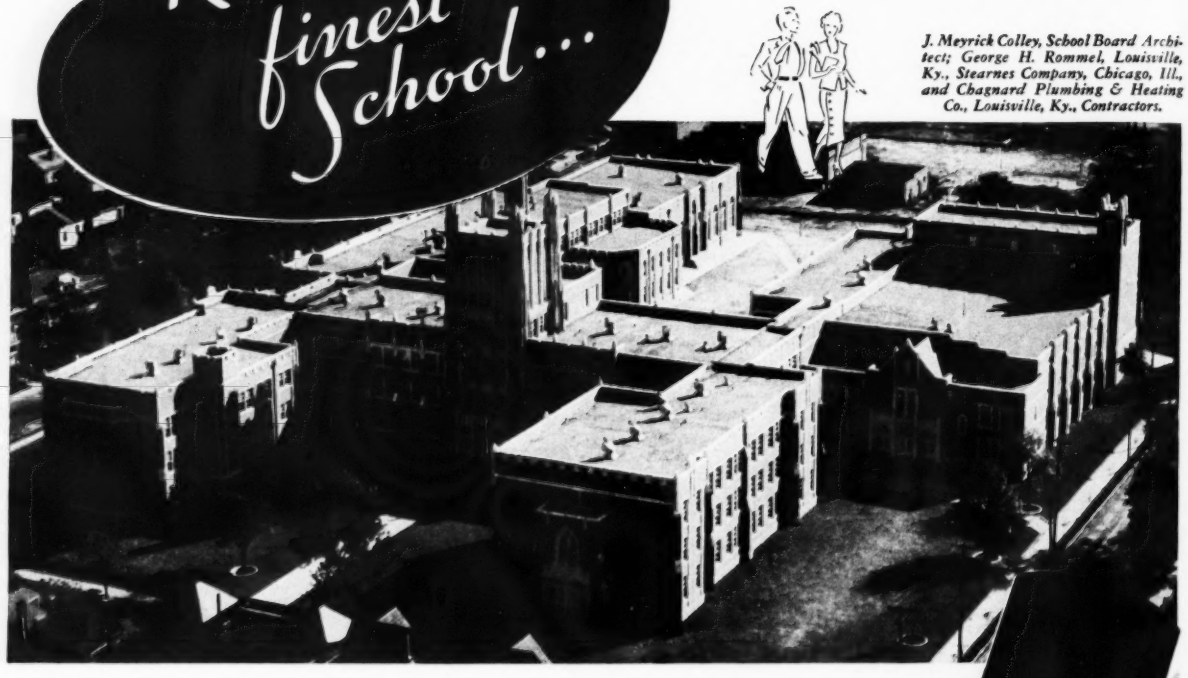
...ection Methods Today, as Told ...everal Who Have ...n Successful in ... Work
PAGE 48

APRIL
1935

Plumbing & Heating Contracting and Merchandising

4

Kentucky's finest School...



J. Meyrick Colley, School Board Architect; George H. Rommel, Louisville, Ky., Stearnes Company, Chicago, Ill., and Chagnard Plumbing & Heating Co., Louisville, Ky., Contractors.

equipped with *TONCAN IRON PIPE*

One of the finest school buildings in the State of Kentucky, the Louisville Girls' High School, is equipped with black and galvanized Toncan Iron Pipe for water and steam lines in the cafeteria. This building, with equipment, cost almost a million dollars and is typical of the fine character of the buildings in which this better pipe is being installed. • Toncan Iron is recognized by owners, architects, engineers and contractors as a forward step in the fight against rust. For twenty-five years it has been saving money for building owners by cutting down replacements. • It is an alloy of refined open hearth iron, copper and molybdenum. It possesses the highest rust-resistance of any ferrous metal in its price class. In the form of pipe, it cuts, bends, threads and welds with no more difficulty than non-alloy pipe. Naturally, it costs a little more, but the increase in cost is far less than the savings it makes through its longer life in service. • Read "Pipe for Permanence" and find out why Toncan Iron Pipe is coming into almost universal use for new work and for replacements. Copy on request.

REG U.S. PAT. OFF.
TONCAN
COPPER
MO·LYB·DEN·UM
IRON PIPE

Republic Steel
CORPORATION
GENERAL OFFICES · · · YOUNGSTOWN, OHIO

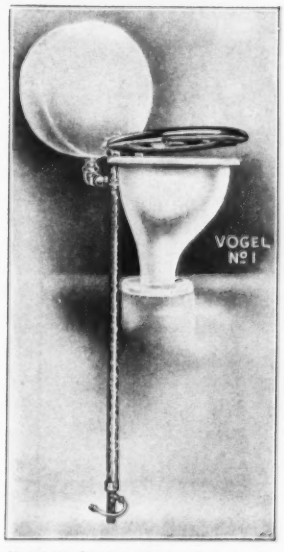
If you had installed a **VOGEL** *you wouldn't have had that trouble*

"WE'VE had tough winters lately; cold weather, and lots of it. That's why I always recommend Vogel outfits to my customers. A Vogel frost-proof will stand the hardest kind of use and the coldest weather, and will last for years without even a minor repair.

By all means I would suggest installing a Vogel."

JOSEPH A. VOGEL COMPANY
Wilmington, Del. • • • St. Louis, Mo.

VOGEL PATENTED
Frost-Proof **Products**



Vogel No. 1—Many thousands in use in all parts of the country. Cannot freeze, no matter how cold the weather.

Vogel No. 4—Frost-Proof. China bowl, top supply. Same valve as the Vogel No. 1. As good looking as a bathroom closet.

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

April, 1935

NRA CODE

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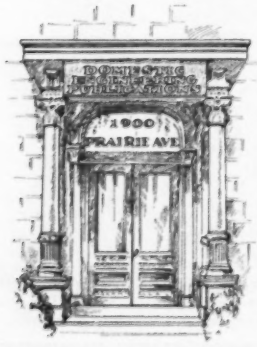

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Branch Offices: NEW YORK, 110 East 42nd Street; CLEVELAND, 310 Citizens Building.

Red Jacket Dealers
KNOW THE ANSWER
to profitable water system sales

QUESTION . . .
Why do Dealers prefer to push Red Jacket Water Systems?

ANSWER . . They can meet all price competition. Quality — there is no better pump built at any price. Dealers know every Red Jacket Water System will give dependable, trouble-free service. Dealers appreciate Red Jacket's large discounts.

QUESTION . . .
Why are Red Jacket's Retail prices lower?

ANSWER . . Quantity production — intelligent manufacturing methods — low overhead costs.

QUESTION . . .
What about consumer acceptance?

ANSWER . . For over 50 years pump buyers, the country over, have learned Red Jacket means quality, economy, performance, long life and dependable guarantees.

QUESTION . . .
Why has Red Jacket NEVER REDUCED their large dealer discounts?

ANSWER . . Because, first and always, Red Jacket believes in cooperating with the jobber and dealer, paying them liberally for their sales efforts.

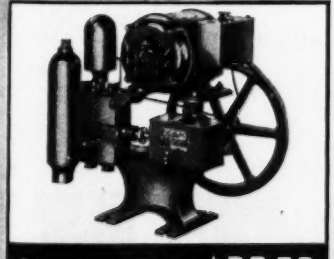
No wonder Dealers push Red Jacket Water Systems

With the big Water System season just ahead, line up with Red Jacket and make MORE SALES and MORE PROFIT. Write for new 1935 catalog today.

RED JACKET MFG. CO., Davenport, Iowa

These Shallow Well Water Systems are making Sensational Sales Records for Red Jacket Dealers.

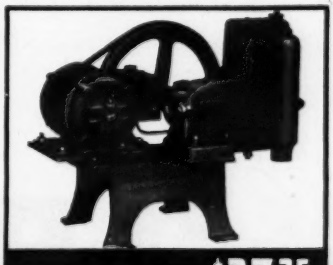
Red Jacket



Model 1148C $33.50

Models 1148
225 GAL. PER HOUR
¼ H. P. — 110 V. Motor. Pressure Switch with thermal overload coil and button, extra large bearing surface, bronze bearings, stainless steel piston rod, plunger easily removed; easy valve inspection.

With 15-gallon tank	$39.95
With 42-gallon tank	$53.50



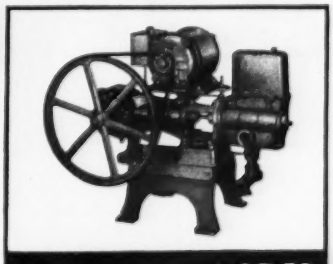
Model 1150C $37.25

Models 1150
250 GAL. PER HOUR
¼ H. P. — 110 V. Motor. Pressure Switch with thermal overload coil and button. Special water lubricated bearings.

With 8-gallon tank	$43.75
With 20-gallon tank	$46.50
With 42-gallon tank	$57.25

Models 1153
350 GAL. PER HOUR
¼ H. P. Motor mounted on hinged base for easy belt adjustment; bronze main bearings. Lubricated by splash system. Pressure Switch with overload coil and button.

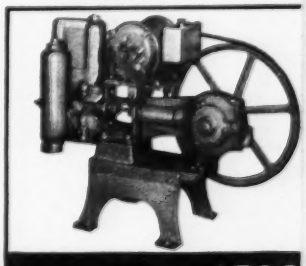
With 42-gallon tank	$68.50



Model 1153C $48.50

Models 1155
500 GAL. PER HOUR
Motor: ½ H. P. — 110/220 V. Thermal overload coil and button on Pressure Switch. Splash lubrication. Heavy steel shaft; extra long bronze crosshead. Hardened steel wrist pin; stainless steel piston rod.

With 42-gallon tank	$89.50



Model 1155C $69.50

POSITIVE VALVE IDENTIFICATION *at all times assured*

For the convenience of Walworth Valve users, we are now supplying all Walworth Quality Valves with an aluminum marking plate, giving the figure number of the valve, the plate being placed directly under the hand wheel nut, as shown in photograph. The valve illustrated is the Walworth Fig. 95, with the now famous lock-on slip-off disc holder, which was originated and perfected by Walworth to save time and trouble in changing discs. It also has the union bonnet connection recognized by valve users as being the best type of bonnet connection.

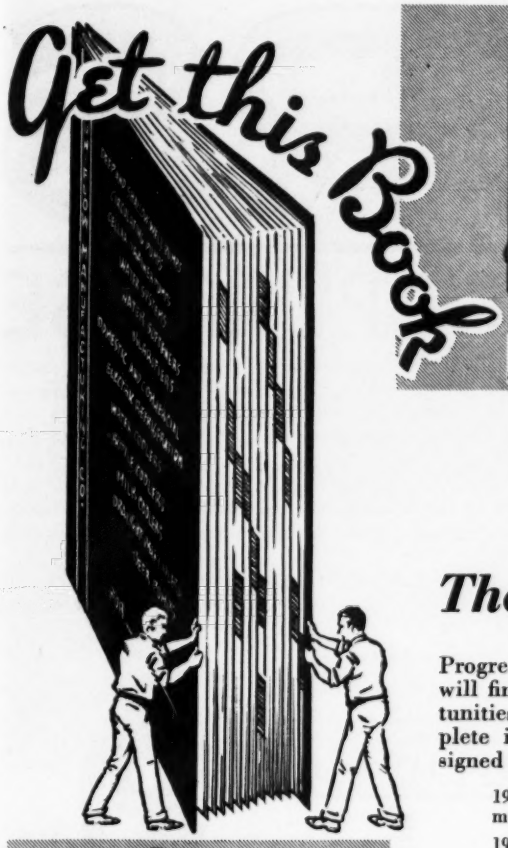
NRA

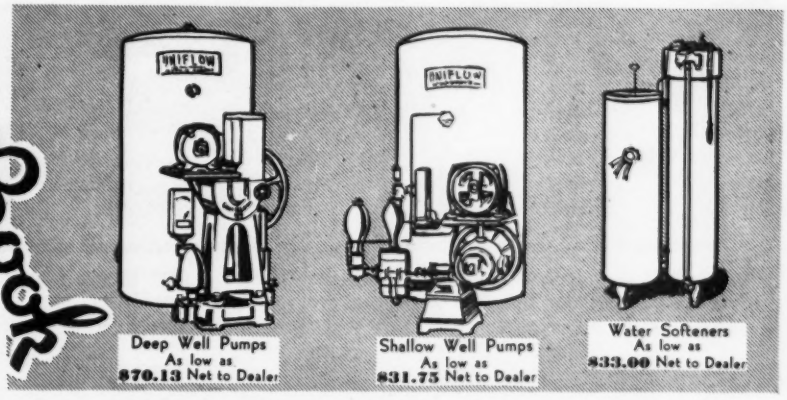
WALWORTH

VALVES FITTINGS and TOOLS
Backed by 91 Years' Service

WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD





Deep Well Pumps
As low as
$70.13 Net to Dealer

Shallow Well Pumps
As low as
$31.75 Net to Dealer

Water Softeners
As low as
$33.00 Net to Dealer

There's More Profit *in Handling The* Complete Uniflow Line

Progressive and aggressive Merchant Plumbers and Wholesalers will find this new loose leaf catalogue a doorway to wider opportunities for more profit dollars. It puts at your fingertips, complete information on 11 Major Uniflow Products. Each is designed and priced to get the business for you.

1935 Model Lectrik-Ice Refrigerators, in all sizes for Home and Commercial applications.

1935 Lectrik-Ice Bottle Beverage Coolers; Lectrik-Ice Draught Beer Coolers and Uniflow Beer Pumps. Here is a live line that has a prospect in every city block. We promise operation economies that will make ice obsolete for cooling.

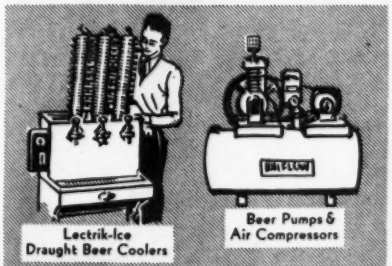
1935 Lectrik-Ice Water Coolers for Offices and Institutions.

1935 Lectrik-Ice Milk Coolers for the Farmer.

And, of course, the well known and constantly improved line of Uniflow Deep and Shallow Well Pumps, Water Softeners, and Klarifiers for Farm and Suburban use.

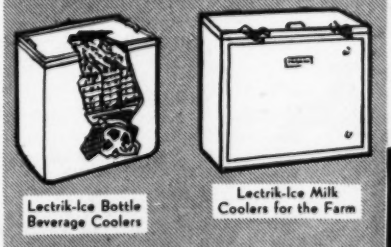
Each of these carefully engineered products carries the strong Uniflow Guarantee that assures customer satisfaction and dealer protection.

Put this profitable line at your finger tips by getting this new catalogue. Clip the coupon today, indicate the products that interest you.



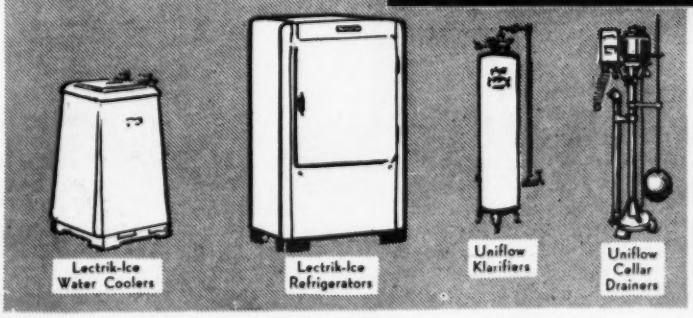
Lectrik-Ice Draught Beer Coolers

Beer Pumps & Air Compressors



Lectrik-Ice Bottle Beverage Coolers

Lectrik-Ice Milk Coolers for the Farm



Lectrik-Ice Water Coolers

Lectrik-Ice Refrigerators

Uniflow Klarifiers

Uniflow Cellar Drainers

UNIFLOW MFG. CO., ERIE, PENNA.

LET ME HAVE COMPLETE STORY

UNIFLOW MFG. CO., ERIE, PENNA.

Please include complete information on checked items.

☐ Deep and Shallow Well Pumps	☐ Water Softeners	☐ Klarifiers
☐ Air Compressors	☐ Cellar Drainers	☐ Beer Pumps
☐ Draught Beer Coolers	☐ Water Coolers	☐ Electric Refrigeration
	☐ Milk Coolers for Farms	☐ Bottle Beverage Coolers

Name _____

Address _____

City _____ State _____

MYERS

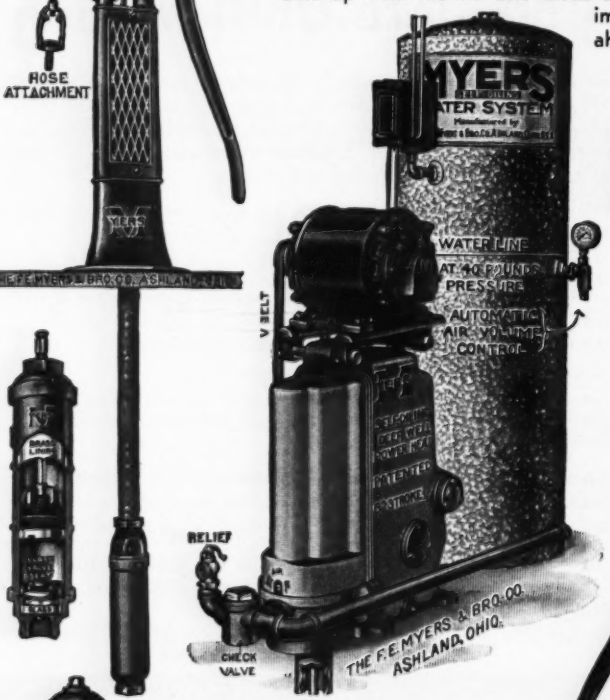
PUMPS for EVERY PURPOSE

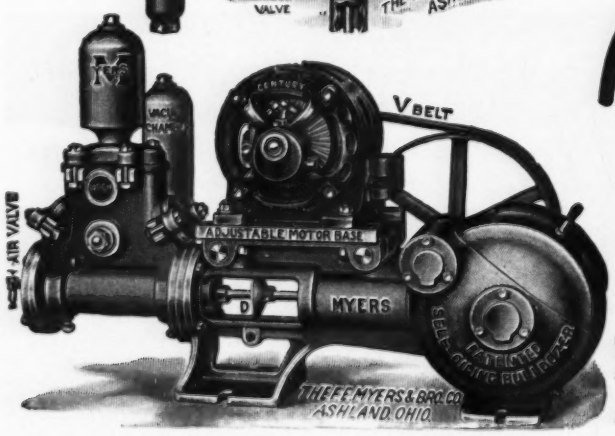
Hand and Windmill Well, House and Cistern Pumps—Pump Stands—Pumping Jacks—Low Down Force Pumps—Self-Oiling Power Pumps—Water Systems—Centrifugal Pumps—Cylinders and Well Accessories—here is a nationally advertised quality line of pumps with exclusive improvements galore for which there is an established year through market in city, town or rural district.

Conditions this year are particularly favorable to pump sales and Myers Dealers have an excellent opportunity to secure the bulk of this business in their locality with Myers "honor-bilt" Hand and Power Pumps that will give the user lasting satisfaction and bring you worth-while profits.

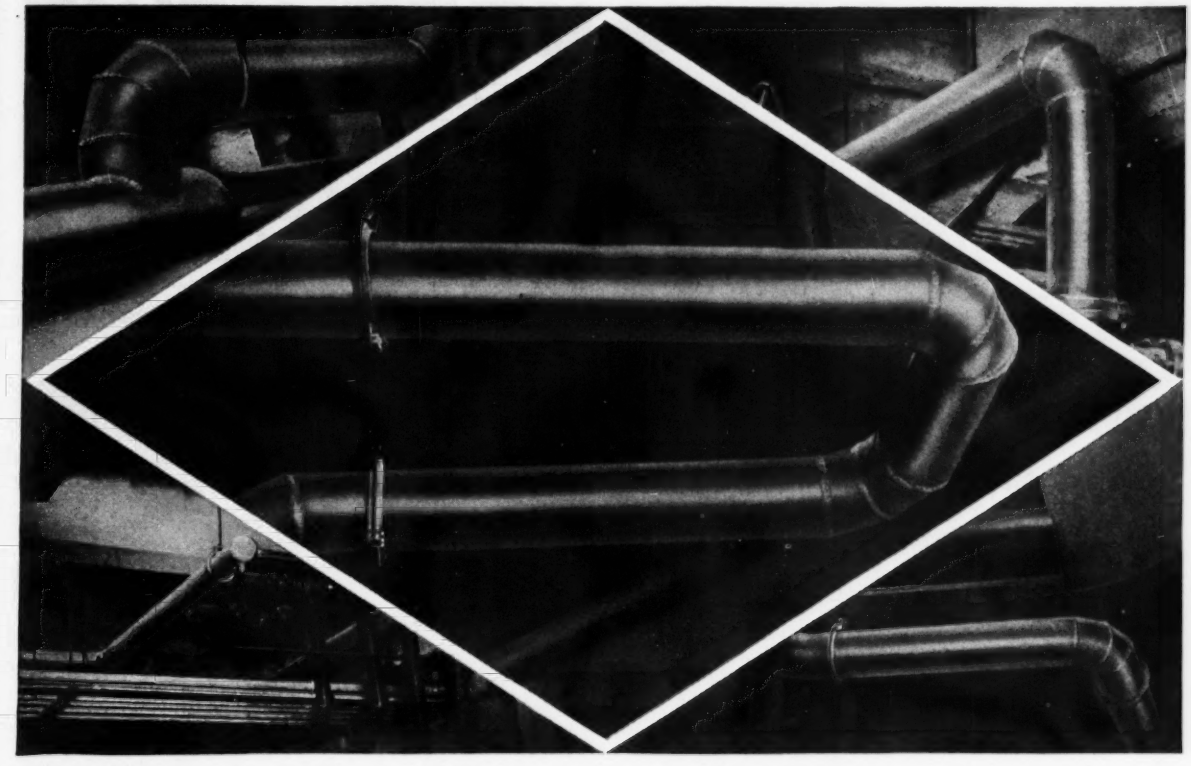
Line up with the MYERS LINE and get the benefit of its many advantages during the important pump and water system selling seasons just ahead.

Write or wire.





THE F.E. MYERS & BRO. CO.
ASHLAND, OHIO.
ASHLAND PUMP AND HAY TOOL WORKS



The Thing you cannot Buy is often Worth the Most . . Linde Process Service

ON a six-million dollar building project, Linde engineers cooperated closely on every detail of the piping work. During the preliminary stage, they pointed out to the architect, the contractor and the owners, the construction and maintenance savings possible with welded piping. While the plans were being drawn, they worked closely with the engineers to see that they had the latest data on improved welding practices. During construction, Linde engineers were constantly on the job. On final tests every joint proved completely tight. The owners and architects indicated their complete satisfaction by stating that in future construction they would specify oxwelded joints.

This is Linde Process Service at work.

In this typical case Linde Process Service functioned before work was started—and during construction, they brought the combined resources of a vast organization to bear on the problems involved. The Linde organization has, in its own right, vast facilities for the constant improvement of oxy-acetylene welding and cutting. And, for the study and adjustment of the metallurgical and chemical phases of welding, it has the unique cooperation of other units of Union Carbide and Carbon Corporation which have attained industrial leadership in these fields.

You get in Linde Process Service —when you buy Linde Oxygen—as much cooperation from Linde engineers as you need to assure the greatest benefit from your use of the oxy-acetylene process.

Any Linde man will gladly give you further information about Linde Process Service. Linde Sales Offices are located at Atlanta, Baltimore, Birmingham, Boston, Buffalo, Butte, Chicago, Cleveland, Dallas, Denver, Detroit, El Paso, Houston, Indianapolis, Kansas City, Los Angeles, Memphis, Milwaukee, Minneapolis, New Orleans, New York, Philadelphia, Phoenix, Pittsburgh, Portland, Ore., St. Louis, Salt Lake City, San Francisco, Seattle, Spokane and Tulsa. Everything for oxy-acetylene welding and cutting—including Linde Oxygen, Prest-O-Lite Acetylene, Union Carbide and Oxweld Apparatus and Supplies —is available from Linde through producing plants and warehouse stocks in all industrial centers.

● *PIPING, Piping everywhere — reducers, offsets, expansion bends, traps, headers — is welded into strong, economical, everlasting unified systems.*

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

In Canada: Dominion Oxygen Co. Ltd., Toronto

YOU CAN ORDER EVERYTHING FOR OXWELDING AND CUTTING FROM LINDE

CHICAGO FAUCET NEWS

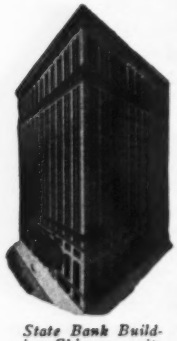
Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 3 No. 6

PERFORMANCE BUILDS PREFERENCE

LONG USE CREATES ENTHUSIASM FOR CHICAGO FAUCETS

Mechanical and Operating Features Promote Economies

One of the most impressive things about Chicago Faucets is the way they build such unshakeable preference by their performance. Those who have used them longest are their most ardent boosters. Thousands upon thousands of Chicago Faucet users throughout the country, users who base their opinion upon long experience, will tell you that they prefer Chicago Faucets because they give most satisfactory service with least trouble and expense.



State Bank Building, Chicago, equipped with Chicago Faucets.

As a typical instance, the man responsible for maintenance at the State Bank Building, Chicago, commenting upon the Chicago Faucets with which that building is equipped throughout, said: "They have given no trouble and are still apparently as good as ever."

There you have the reason why thousands of users prefer Chicago faucets, and they just can't be wrong.

Weather Forecast— ADD-A-SHOWERS

April showers are the annual reminder that summer is just around the corner and that now is the time to prepare for hot weather with an Add-a-Shower.

The thousands of showerless bathrooms throughout every community are the plumber's warrant for pressing for Add-a-Shower sales now. The Add-a-Shower is the convenient, inexpensive means of converting old-fashioned showerless bathrooms into thoroughly modern ones. It can be installed in a few minutes without marring walls or disturbing present arrangements. It is a permanent, handsome piece of bath equipment which enhances the appearance of any bathroom. It costs the owner comparatively little, yet it carries a substantial profit for the plumber. Push Add-a-Shower sales now.

No. 532. Add-a-Shower for built-in tubs with hot and cold outlets.

No. 528. Add-a-Shower for built-in tubs with single outlet and hot and cold valves on wall.

There is an Add-a-Shower For Every type of tub installation.

THERE'S HAPPINESS AHEAD for BUYERS of BASIN FAUCETS

No. 277. Chicago Basin Faucet with indexed china cross handle. Chromium plated.

With the announcement, last month, of lower list prices on Chicago Basin Faucets, the pocket book obstacle to many sales was removed. Buyers have always shown a strong preference for Chicago Faucets because of their unit construction and their superior operating principle. But many have been restricted in the recent past by price considerations. Now these buyers are happy to learn that they can secure Chicago Basin Faucets at prices well within the competitive range and with no sacrifice of the high quality for which Chicago Faucets have always been noted.

Chicago Basin Faucets are available in a variety of styles with top or side handles, either metal or china, and in both compression and self closing types. Display these fine basin faucets and feature their new prices—then watch your sales increase.

No. 52. Chicago Basin Faucet with indexed china top lever handle. Chromium plated.

WHY MAINTENANCE MEN SEEM CALMER

The rapidly increasing use of Chicago Faucet Urinal Tank Fillers may be the reason why exasperation is fading from the demeanor of maintenance men. At any rate these tank fillers make a difference. They have a Monel metal-to-Monel metal seat in the valve which practically does away with the water cutting ordinarily so common to this class of service. Remember, it's No. 94 the next time you need urinal tank fillers.

WHEN GREEK MEETS GREEK

Partial view, Crystal Barber Shop, Chicago, equipped with Chicago Faucets.

G. D. Cominos, prominent Chicago Greek and proprietor of the famed Crystal Barber Shop in the "Loop," is a Chicago Faucet enthusiast. And he is especially outspoken about the particular Chicago Faucets in his establishment. Mr. Cominos believes this to be the ideal faucet for barber shop service, and he delights in telling his compatriots so.

Of course there is a sound basis for Mr. Cominos's enthusiasm. It is due to the gratifying experience he has had with Chicago Faucets and to nothing else, for several years ago when the installation was made he took it "on trial." Recently, Mr. Cominos said, for publication, "Barbers in a busy shop like this are no respectors of faucets. They give faucets hard use. Yet these Chicago Faucets with metal-to-metal seats have stood the racket without leaking or giving any seating trouble, and they are still in fine shape."

GAS COMPANY SOUNDS WARNING ON WASTE OF HOT WATER

In a recent issue of *Peoples Gas Gazette*, distributed to householders by the Peoples Gas Light & Coke Co., Chicago, the following item appeared under the caption, "Count the Drops":

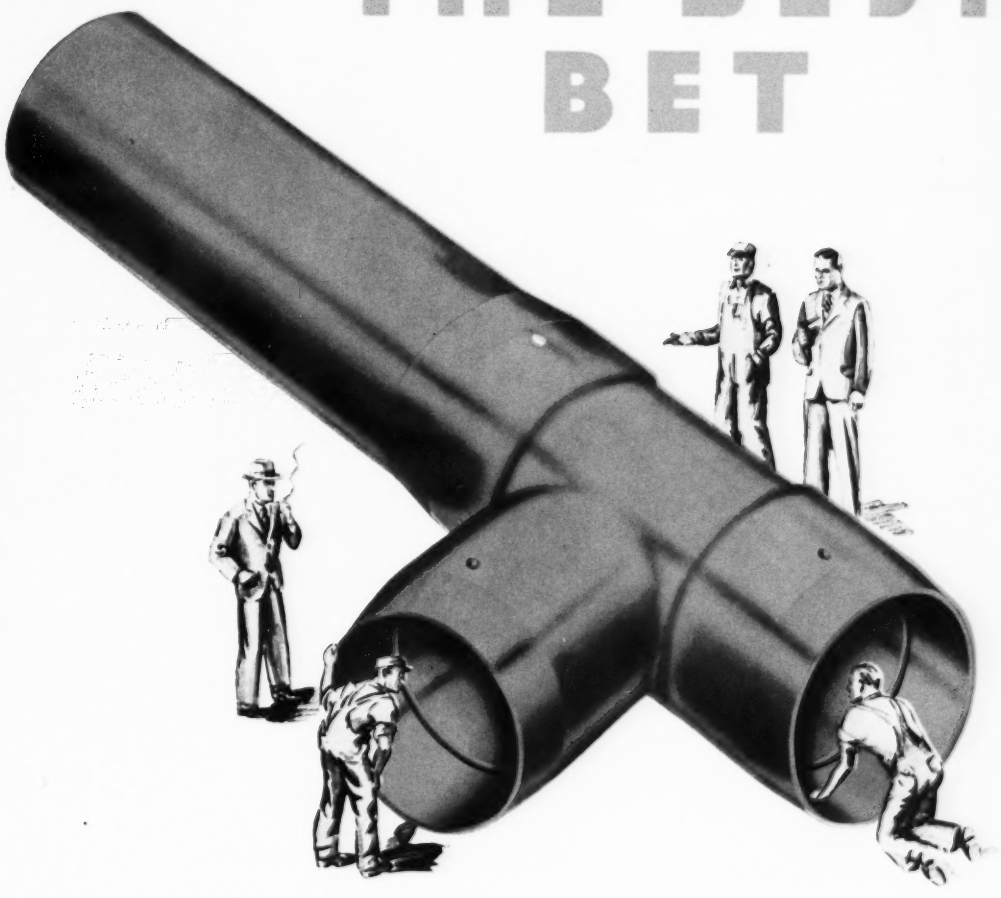
"Leaky faucets waste gas. Count the drops that may be leaking from your hot water faucet. If you are losing 60 drops per minute, the total will be 192 gallons per month or 5 day's hot water supply for an average family.

"Leaks that run 120 drops a minute waste more than twice as much water, as the drops are larger at the faster rate.

"If your faucets are leaky it is a real economy to call in your NEIGHBORHOOD PLUMBER and have them put in first class condition."

What an argument for Chicago Faucets with their easily renewable Monel seat!

FROM EVERY ANGLE THE BEST BET



● Any way you look at it STREAMLINE is the plumber's and steamfitter's best bet. The introduction of STREAMLINE, a little over four years ago, put new life in a stagnant depression market — IT GAVE THE PLUMBER AN OUT. It was one of those new products embodying revolutionary ideas and methods that a jaded public demanded — and it gained favorable recognition and acceptance over night.

STREAMLINE has done more in maintaining the plumber in his rightful place in the minds of the public than any other product — his place as a first-class mechanic and not a handy man. This was no product that could be used by a Jack-Of-All-Trades who might borrow his neighbor's wrench. It required the plumber's skill and plumber's tools to install.

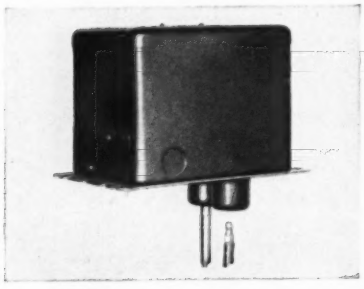
In a few short years STREAMLINE Copper Pipe and Fittings has revolutionized the plumbing and heating industry and has been used in thousands upon thousands of installations and in every type of building construction.

STREAMLINE Copper Pipe and Fittings are not procurable from direct-to-you houses or department stores. They can be had from *recognized plumbing jobbers only.*

STREAMLINE is the granddaddy of them all — from every angle your best bet and from every angle worthy of your support.

STREAMLINE
PIPE AND FITTINGS
PORT HURON, CO. MICHIGAN
DIVISION OF MUELLER BRASS CO.

These G-E Products Will Give Your Burners 12 Valuable Sales Features



Equip your burners with G-E Ignition Transformers

Consider these sales features:

1. Positive ignition even under adverse conditions.
2. Exceptional freedom from radio interference — these transformers have perfect and permanent electrostatic balance.
3. Economy and safety — a shockproof installation can be obtained at no extra cost without the use of insulating caps or metal terminal shields.
4. Neater installations—because the plug-type terminals simplify connections.

Use G-E Motors

They will help you sell your burners because of these sales advantages

1. Minimum attention—oiling once a year is sufficient.
2. Vibrationless, smooth power that assures customer satisfaction.
3. Long, trouble-free service life because the windings are protected from moisture, heat, and vibration.
4. Indestructible rotors that cannot become open-circuited or burn out.
5. Reliable starting switches—always on the job, ready to start the moment the thermostat calls for more heat.
6. Quietness—assured by end-play silencers.
7. Safety—dripproof end shields protect the user from contact with moving parts and also shield the motor from falling dirt and liquids.
8. Pleasing appearance—they are designed to harmonize with the modern oil burner. They are available for either base or flange mounting.

In addition, you obtain the sales appeal attached to the name General Electric—a name that stands for long life and reliability. For all-round lasting quality, use G-E motors, transformers, and cable. General Electric, Schenectady, N. Y.

670-21

GENERAL ELECTRIC

The biggest values GOULDS EVER OFFERED

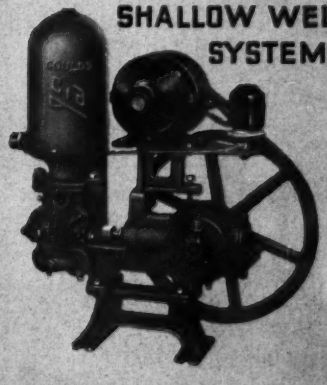
$115.00 AND UP

CID DEEP WELL SYSTEMS

NEW LOW PRICES ON 6 IN. STROKE CID DEEP WELL SYSTEMS

Last year's reduction on 9 in. Stroke CID Systems and this year's low prices on the 6 in. CID line give you a powerful selling advantage. Goulds quality at strictly competitive prices makes a double barrelled business getter for you. You don't have to waste time explaining Goulds to prospects. Everybody knows Goulds and Goulds quality.

$49.85 AND UP

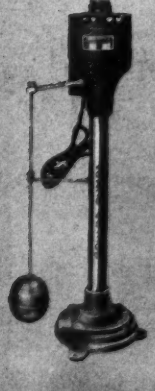


CID SHALLOW WELL SYSTEMS

NEW 350 GALLON SIZE CID SHALLOW WELL SYSTEM $53.85 AND UP

In addition to continuing last year's low prices on CID Shallow Well Systems, Goulds have added a new 350 gallon size. On all CID Shallow Well Systems a full size motor, 2 bearing crank shaft, completely automatic-oiling, and extra strength parts throughout, give you a big advantage, no matter what your competition. All working parts easily accessible.

$35.00



CID CELLAR DRAINER

NEW CID CELLAR DRAINER ALL BRONZE CONSTRUCTION

This latest addition to Goulds line still further increases your profit opportunities. Capacity is larger and price lower than competing models. Completely automatic. Full ¼ H. P. Motor. Rust proof construction. Requires pit only 18 inches in diameter. Hundreds already sold. The market is big. Here is the unit to get you the lion's share of the profits.

GOULDS

SEND NOW FOR COMPLETE NEW GOULDS CATALOG
GOULDS PUMPS, INC., 210 Fall Street, Seneca Falls, N. Y.

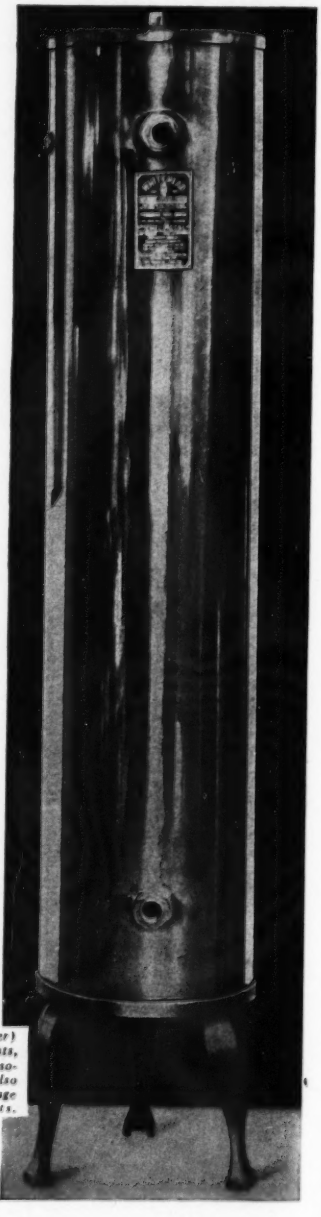
Please send me the New Free Goulds Dealer Catalog.

*Name*_____

*Firm*_____

*Address*_____

The FIRST WARM DAYS *of Spring . . . Bring Thoughts of* HOT WATER



Use the help of Mother Nature and Uncle Sam to sell more Monel Metal Hot Water Tanks!

FURNACE fires are going out. Mother Nature sees to that. Families that have enjoyed hot water all winter are going to feel the lack of it as summer comes on.

Many of your customers are going to put in new water heating systems. Uncle Sam sees to that, for loans are available under the National Housing Act.

Somebody is going to sell Monel Metal hot water tanks. *Hadn't YOU better see to that?*

Just a reminder is often enough. You know that "Whitehead"* Monel Metal tanks are stronger than old-type tanks, can't rust, resist corrosion. Do your customers know you can supply such a tank?

If they *don't*, they're likely to go to the man who doesn't keep it a secret! Write for prices, discounts, and information about the sales help that is yours on call. Write. Whitehead Metal Products Company of New York, Inc., 304 Hudson Street, New York, N. Y.

*Reg. U. S. Pat. Off.

THE INTERNATIONAL NICKEL CO., INC., 67 WALL ST., NEW YORK, N.Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

Monel Metal Hot Water Tank (Range Boiler) made in all standard sizes in three weights, and tested to 200, 250 and 350 lbs. Absolutely rust-proof. Guaranteed 20 years. Also available are Monel Metal horizontal storage tanks for large homes and apartments.

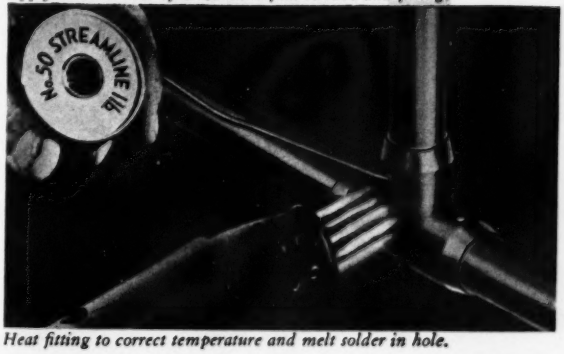
MONEL METAL

MONEL METAL NRA CODE

Cut tube square with hack saw. Remove burr. Round up tube.

Thoroughly clean tube and fitting with sandpaper or sandcloth.

Apply an even coat of Streamline flux to tube and fitting.



Heat fitting to correct temperature and melt solder in hole.

Make joints this way for perfect results

● Revere Copper Water Tube and Streamline soldered Fittings* reward the skilled mechanic. With them, he can do a trim-looking job that is a permanent endorsement for his workmanship . . . the sort of job that helps get more business.

The tube and fittings are perfectly matched. They are made to very close tolerances . . . so that, when assembled, a snug fit is assured. This permits the law of capillary attraction to function to its fullest extent.

The solder feed-hole in the Streamline Fitting provides a real advantage, because there's no guesswork as to whether the solder is going in right. It doesn't matter whether the hole is at the top, bottom, or on the side . . . the solder flows up, down, and laterally over the entire area between tube and fitting. The result is a tight, permanent, leak-proof, and vibration-proof joint.

There's no question either as to when the joint is properly made, for a bright ring of solder forms around the tube at the end of the fitting. That's a positive okay on the joint.

Here's the way to install the tube and fittings. We *know* it makes an A-1 finished job.

1. Cut the Revere Copper Water Tube square with a 32-tooth hack saw. Remove the burr. **2.** Thoroughly clean inside of fitting where joint is to be made with *sandpaper* or *sandcloth*. Similarly, clean outside of tube to the depth of the fitting. **3.** Apply an even coat of Streamline soldering flux to outside of tube and inside of fitting. (During very cold weather, warm fitting to room temperature 70°-80°). **4.** Slip tube into fitting as far as it will go, and turn back and forth to distribute flux. **5.** Using a blowtorch, melt a drop of Streamline solder into solder feed-hole. Apply heat around the Fitting until solder disappears. This indicates proper temperature has been reached. Continue to feed solder through hole until a bright ring appears around the end of the fitting. This ring is proof of a perfect joint. Fill hole completely. Surplus can be removed with cloth.

Revere Copper Water Tube opens up opportunities for both new and replacement work. It is *the* modern piping material. It comes in three types (K, L, and M), which meet the various corrosive conditions and price considerations which you encounter in your work.

*Patents 1,770,852, 1,776,502, 1,890,998.

REVERE COPPER WATER TUBE AND **STREAMLINE** SOLDERED FITTINGS ARE MATCHED FOR PERFECT RESULTS.

Revere Copper *and* Brass

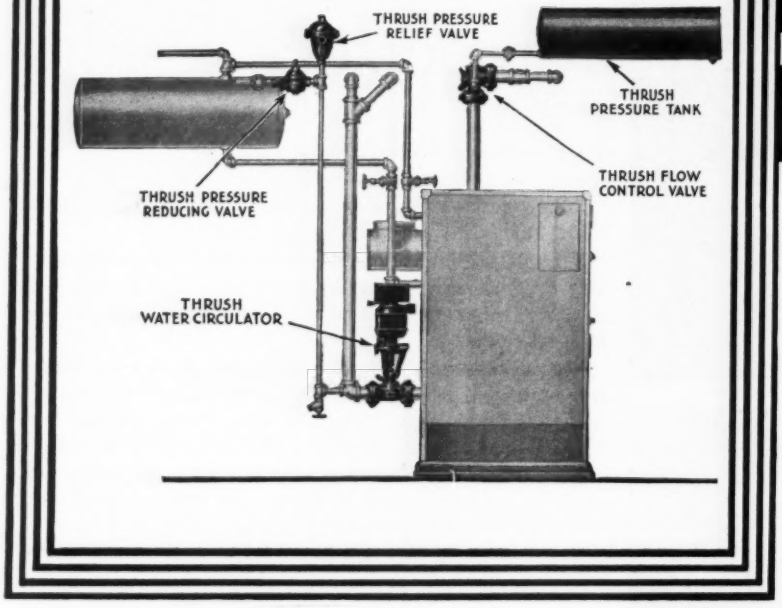
INCORPORATED

Founded by Paul Revere 1801

EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY · MILLS: BALTIMORE, MD. · TAUNTON, MASS. NEW BEDFORD, MASS. · ROME, N. Y. · DETROIT, MICH. · CHICAGO, ILL. · SALES OFFICES IN PRINCIPAL CITIES

NRA CODE

Makes hot water heating QUICK HEATING



THRUSH FLOW CONTROL SYSTEM

guarantees your customer efficient heat without overheating or waste of fuel

Thrush Flow Control System makes hot water heating "quick heating"—quicker than steam. A reservoir of hot water is kept available for instant distribution throughout the heating system. When heat is needed, forced circulation delivers hot water into every radiator in every room quickly. When room temperature is restored circulation stops. Therefore there is no overheating and no waste of fuel.

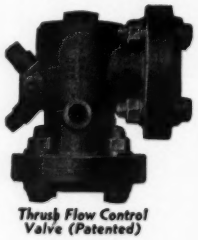
This hotter water In the boiler also makes the auxiliary water heater more efficient and provides a really hot domestic water supply in winter or summer at trifling cost.

Thrush Flow Control maintains temperatures with a uniformity never before possible with hot water heat. It reduces the running time of the burner and saves fifteen to thirty per cent of the year's fuel bill.

★ THE MODERN BOILER-BURNER UNIT DEMANDS THRUSH FLOW CONTROL

YOUR business depends upon the satisfaction of your customers. Installations of unusual efficiency always *sell others for* you. Therefore, it pays to equip every Boiler-Burner Unit or other automatic hot water heating job that you install with Thrush Flow Control System. It makes any hot water heating plant so much more efficient with such slight additional investment that *increased sales are easy.*

H. A. THRUSH & CO.
PERU, INDIANA


Thrush Flow Control Valve (Patented)

Thrush Water Circulator

THRUSH FLOW CONTROL FOR HOT WATER HEAT

MAIL THIS COUPON!

H. A. Thrush & Co.,
Box 459, Peru, Ind.

Please send booklet describing Thrush Flow Control Heating System and its advantages for use with automatic firing devices.

Name .....

Address .....

City ..... State .....

Quality since 1869

K-4039-M—SPEAKMAN Mixometer Shower and Tub Combination. ½-inch size. All metal handles and escutcheons. Has Speakman Anystream Self-Cleaning Shower Head and Act-Easy Pop-Up Waste. Valves connected by brass pipe and tested.

And we have always been specialists in brass . . .

IT is generally admitted that "If it's Speakman, it's quality." Our reputation for quality is due largely to the fact that all of our efforts are concentrated in one field—brass plumbing.

As you know, we sponsored the movement which resulted in the shower becoming the national way of bathing. We also brought into prominence the single nozzle lavatory fixture as the sanitary and comfortable way of washing—in running tempered water.

We also brought out the Anystream Self-Cleaning Shower Head which can never stop up and which permits a normal, needle or flood shower by half a turn of the lever handle.

And more recently, we developed the only quiet flush valve, the Si-Flo.

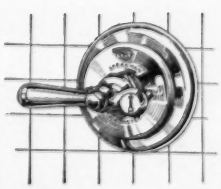
It is only because we concentrate our efforts on brass plumbing that we can do these things.

And for this same reason, when you suggest the use of any Speakman shower or fixture to your customer, you are safe in assuming that you are recommending the finest made and most modern fixture that can be installed.

SPEAKMAN COMPANY
WILMINGTON, DELAWARE

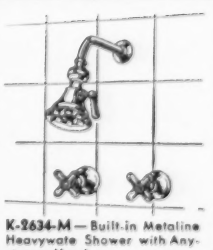
...Speakman Any-...m Self-Cleaning ...er Head. (Patented ...ary 2, 1923 and ...mber 3, 1931.)

K-5503-M—Grace-Line Sink Fixture (Design Patented).



K-3365—Speakman Built-in Mixometer.

K-5010—Speakman Unit-Acto Lavatory Fixture.



K-2634-M—Built-in Metaline Heavywate Shower with Anystream Head.

K-4585-M Dupont Tub Filler with Act-Easy Waste.

SPEAKMAN *Showers and Fixtures*

"Come

● The Federal Housing Administration (F.H.A.) estimates a total of over $400,000,000 worth of modernizing work already created by Title I of the National Housing Act. Of this, 11.34% or $45,360,000 is for Heating, 9.97% or $38,800,000 is for Plumbing.

Widespread publicity, local canvassing campaigns and various other types of activity are bringing to light new prospects for modernizing work constantly.

The advantages offered by Title II of the National Housing Act will mean another big slice for you from new building in your locality.

All of which means that you need only to "Come and Get It" for more business in 1935.

GRINNELL COMPLETE

HANGERS

FITTINGS

THERMOFLEX TRAPS

and Get It"!

Guarantee your jobs with Grinnell Cast and Malleable Iron Fittings

Every job you get will be a better job if you standardize on Grinnell Cast Iron and Air Furnace Malleable Iron Fittings. Here's why—in simple, easily provable terms.

Proper chamfer means easy starting

Substantial flat band gives sure pipe wrench grip

Sharp, accurate threads assure airtight joints

Freedom from sandholes eliminates wall leaks

Rigid inspection guarantees dependability

Grinnell Cast Iron and Air Furnace Malleable Iron Fittings with all of these positive advantages cost no more than ordinary fittings. The importance of being able to guarantee a satisfactory piping job makes it "good business" to standardize on the fittings marked with the Grinnell "G"—your guarantee of uniform high quality.

Ask your nearby Grinnell Distributor for a copy of Catalog No. 3 or write to us for one.

GRINNELL COMPANY

EXECUTIVE OFFICES PROVIDENCE, R. I.

Branch Offices in Principal Cities

THE GRINNELL DISTRIBUTOR IS ALWAYS READY TO HELP YOU

He maintains all these services for your assistance.

Complete stocks of finest quality fittings

Immediate Delivery

Immediate price and product information

Complete catalog service on any item or line

Competent knowledge of product applications

Material estimates for any set of plans

Double guarantee—he has selected his lines carefully so that he can give you his own guarantee plus that of the manufacturer.

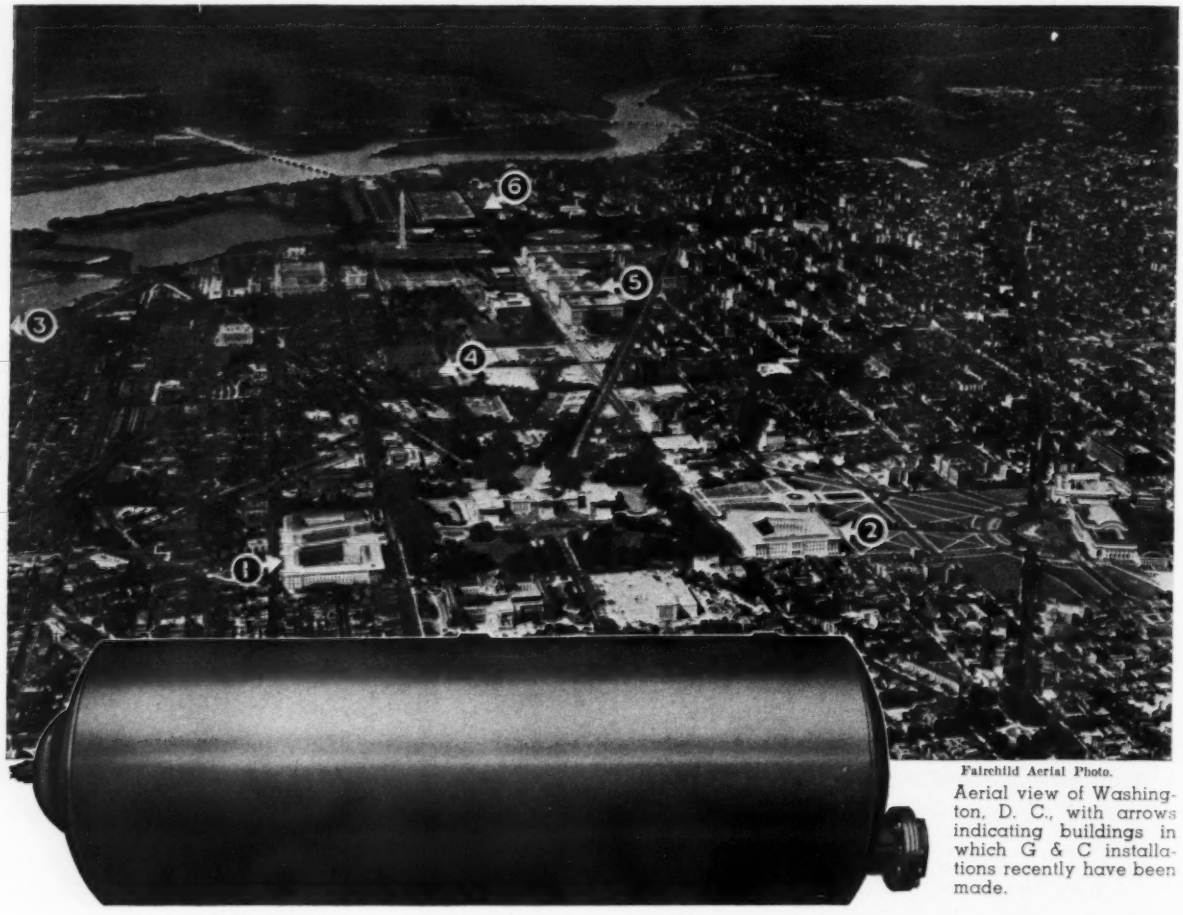
It pays to depend upon the Grinnell Distributor for all of your piping requirements.

PIPING SERVICE

AUTOMATIC SPRINKLERS

THERMOLIER UNIT HEATERS

FABRICATED PIPE



Fairchild Aerial Photo.

Aerial view of Washington, D. C., with arrows indicating buildings in which G & C installations recently have been made.

Copper Silicon Alloy Tank
Federal Specifications WW-P-541

Key to Washington, D. C., Buildings containing G & C installations.

1. House of Representatives Office Building
2. U. S. Senate Office Building
3. Potomac Power Company Plant
4. Botanical Gardens
5. Internal Revenue Building
6. National Health Institute

Other Recent Federal Installations

U. S. Capitol Terrace Garage, Washington, D. C.
Naval Ammunition Depot, Thorne, Nevada
U. S. Post Office—Cordova, Alaska
U. S. Post Office—Breckenridge, Texas
U. S. Post Office—Eau Claire, Wisconsin
Marine Hospital—Baltimore, Maryland
U. S. Post Office—Malone, New York

ACHIEVEMENT MARKS THESE WASHINGTON INSTALLATIONS!

GERSTEIN & COOPER

TANKS, AND STORAGE HEATERS IN ALL COPPER AND COPPER SILICON ALLOY

Thirty years of experience, finest quality materials, a corps of artisans skilled in the fabrication of copper and copper alloy products, strict supervision, competent engineering, rigid testing and delivery "On Time."

These are the reasons why contractors in Washington, D. C., Boston, New York and other large cities turn to Gerstein & Cooper when they require the best in rust and corrosion proof tanks, boilers and storage heaters.

These are the reasons why you should send your specifications to Gerstein & Cooper for estimating, and why you should write them whenever you have a copper or copper alloy tank or storage heater problem to solve.

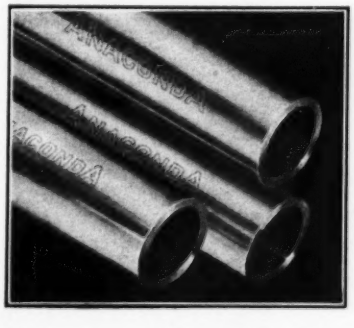
GERSTEIN & COOPER COMPANY
TANKS — STORAGE HEATERS — RANGE BOILERS

New York — South Boston, Massachusetts — Baltimore, Md.

Troop Water Heater Co., Pittsburgh
Edward Sinn, Harrison, N. J.
Lydon, Cousart & Co., Charlotte, N. C.
Strong, Carlisle & Hammond Co., Cleveland, Ohio

WE ARE CO-OPERATING
BETTER HOUSING PROGRAM
ANACONDA
from mine to consumer

Better Brass Pipe Business for you...*in the N. H. A. Program*

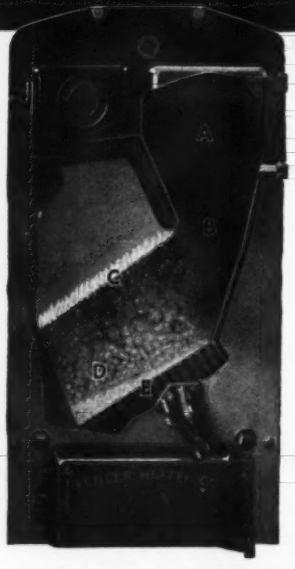


Most people are willing to pay the slightly higher first cost of Brass Pipe, when they understand the convenience and economy it offers. And money is available now under the National Housing Act. ¶ Leading plumbing supply houses carry Anaconda 67 Brass Pipe for normally corrosive water, Anaconda 85 Red-Brass for highly corrosive water, and Anaconda Copper Water Tubes and Solder Fittings.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

ANACONDA BRASS PIPE

Modern AUTOMATIC HEAT is a matter of Equipment, not Fuels



SPENCER Automatic MAGAZINE FEED HEATER

The demand today is for Automatic Heat. But people are interested not so much in the fuel they will burn as in the increased Comfort and Convenience they are going to get. When you sell Spencer you are offering Automatic Heat without the penalty of high price. Over 50,000 Spencer owners will verify our claim, "The Most Comfortable Heat in the World—and at low cost." Only heating contractors can sell Spencer Heaters.

THE C-N SPENCER
Costs Little or No More than ordinary heaters

It has all of Spencer's exclusive Magazine Feed Advantages. Once or twice in 24 hours, nut size Anthracite or Coke is placed in Magazine (A); it fills sloping grate to level of magazine mouth (B). Fire bed always stays at same level (C) for as fast as fuel burns to ash (D), it shrinks and settles on sloping grate (E). Automatically more fuel rolls down to feed the fire, as fast or slow as required.

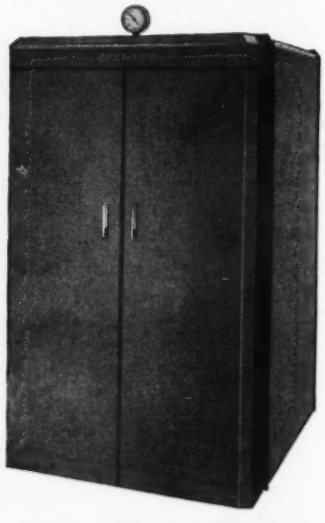
Spencer Offers 2 Types of Automatic Heaters

C-N Series for Larger Anthracite or Coke

J and L Series for No. 1 Buckwheat Anthracite

The C-N Model described at left, and the Buckwheat Spencer (burning No. 1 Buckwheat that costs $4 Less a Ton) enable you to meet every price and fuel demand. With Spencer's many exclusive Automatic Magazine Feed Advantages, you can put something more than price in your bids. You can close more jobs—and at a profit.

The Federal Housing Time Payment Plan is used with extraordinary success by heating contractors who sell Spencer. Because the Fuel Savings with a Spencer help cover the monthly payments. Spencer supplies you with posters featuring this great selling plan. Write today for the full details of the Spencer sales program.



Greatest Newspaper Advertising Campaign in Spencer History

Over 61,000,000 advertising calls will be made this year by Spencer newspaper advertisements. It will pay you to "talk Spencer." Ask us for sales material you can use to "cash in" on this advertising.

SPENCER HEATER COMPANY
WILLIAMSPORT, PA.
Branches in principal cities

Most Comfortable Heat in the World—and at Low Cost!

Announcing

the New Master Kraft TRIPALATOR

1 FUEL OIL SEPARATED INTO FINE GLOBULES HERE
2 FUEL OIL CHURNED INTO FINER GLOBULES HERE
3 FUEL OIL BROKEN INTO MILLIONS OF FINEST GLOBULES HERE

Cash in on this BIG SALES idea!

DEALERS and consumers alike are amazed at the increased efficiency and economy produced by this important invention—the Master Kraft TRIPALATOR.

Records prove that Master Kraft Oil Heat Equipment cuts fuel bills by 20% to as much as 76%. With this new invention, savings should be stepped up even higher.

If you want the biggest idea in the oil heat field for 1935—backed by a complete line—backed by thousands of successful installations—and backed by the most powerful advertising of the year—send the coupon NOW for full information.

MAIL THIS COUPON NOW

Harvey-Whipple, Inc.
457 Emery St., Springfield, Mass.

Kindly send full information on your 1935 Sales Plan based on "TWO MONTHS' FREE HEAT EVERY YEAR."

Name .....

Address .....

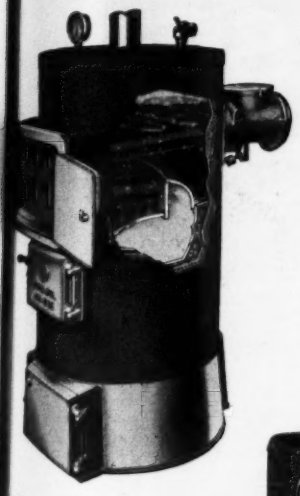
Town .....

NEWER! • Smarter • More Efficient •

When you recommend and sell the Regal Jacket Kewanee you *"Play an unbeatable hand."* For you are offering a Jacket whose attractiveness can be seen at a glance . . . a Jacket designed to accommodate any type burner your customer wishes.

Also . . . *and this is even more important* . . . inside that Jacket is a healthy heart of steel, the Kewanee Round Boiler, with features of design, engineering and construction which have made the Kewanee Type "R" so outstanding for heating homes and smaller buildings.

KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS
Eastern District Office: 37 West 39th Street, New York City



Kewanee Round "R" Boiler with Round Jacket

Kewanee Round "R" Boiler with Square Jacket

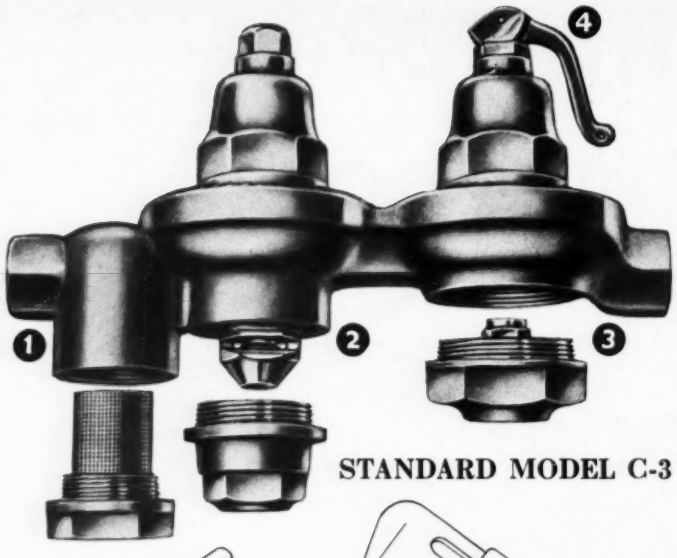
KEWANEE ROUND "R" BOILER WITH REGAL JACKET

Regal Jacket KEWANEE

YOU CAN GET THE INSIDE STORY OF A KAINER GOVERNOR JUST LIKE IT WORKS—*INSTANTANEOUSLY*

No. 1—So easy to inspect and clean Monel Metal Screen Filter, in the strainer.

No. 2—Reducing Valve disc, or seat, replaced without disturbing the bonnet or adjustment.



STANDARD MODEL C-3

No. 3—Relief Valve replacement of removable disc, container and seat very simple.

No. 4—Testing Lever on Relief Valve for checking purposes when quick test is desirable.

The Simplest, Most Accessible Control on the Market

We build our products so that they will perform for many years giving satisfactory and dependable service.

So do reliable Watch Makers, but the best highest priced watch ever made will, in time, require adjustments and cleaning at intervals.

Hot Water Heating Controls are no different. Periodic cleaning and inspections though INFREQUENT are VERY IMPORTANT when contractor or owner wish to make them and for this purpose our EXCLUSIVE design feature of 3-REMOVABLE nuts as shown above not only makes KAINER GOVERNORS the easiest to inspect and clean but allows that this be done without the SLIGHTEST DISTURBANCE to the MAIN adjustments.

See Your Nearest Jobber or Write Us for Literature.

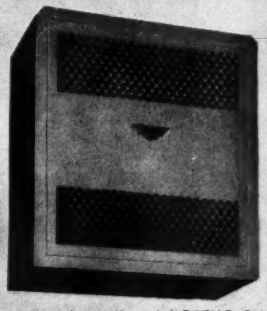
KAINER & COMPANY
761 MATHER . . . . CHICAGO, ILL.

Air Conditioning BY

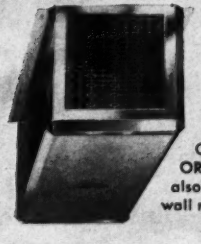
FAIRBANKS-MORSE

ORTHO-CLIME
"Corrected Climate"

Floor model ORTHO-CLIME. Handsome in appearance, efficient in performance.



Large capacity wall model ORTHO-CLIME.



Ceiling model ORTHO-CLIME – also available for wall mounting.

units of proven performance for homes, offices, stores, restaurants, available in many handsome, efficient models

● Fairbanks-Morse ORTHO-CLIME—corrected climate—is now available for both wall and ceiling installation, in addition to the handsome floor models. Providing all year 'round climate control, it offers cooling and de-humidifying in summer, plus heating and humidifying in winter. In capacities ranging from one ton up, using either mechanical refrigeration, ice water or cold spring or well water as the refrigerating medium, they make corrected climate at a cost within the reach of everyone who wants your year 'round weather control.

The Fairbanks-Morse air conditioning line comprises not only the ORTHO-CLIME complete units but also a complete line of blast coils, compressors, pumps and other units for air conditioning service.

Alert distributors and dealers who know Fairbanks-Morse quality and 105-year reputation for dependability are quickly realizing the profit possibilities and valuable features of the F-M franchise. There is still room for a few first class organizations. For complete information, mail the coupon. Fairbanks, Morse & Co., Air Conditioning Division, 900 South Wabash Avenue, Chicago, Ill.

Mail this Coupon for Full Information

FAIRBANKS, MORSE & CO., 900 S. Wabash Ave., Chicago, Ill.
Gentlemen: Please send me complete information on your ( ) ORTHO-CLIME ( ) Dealer franchise ( ) Distributor franchise.

Name.....

Organization.....

Address.....

City..... State.....

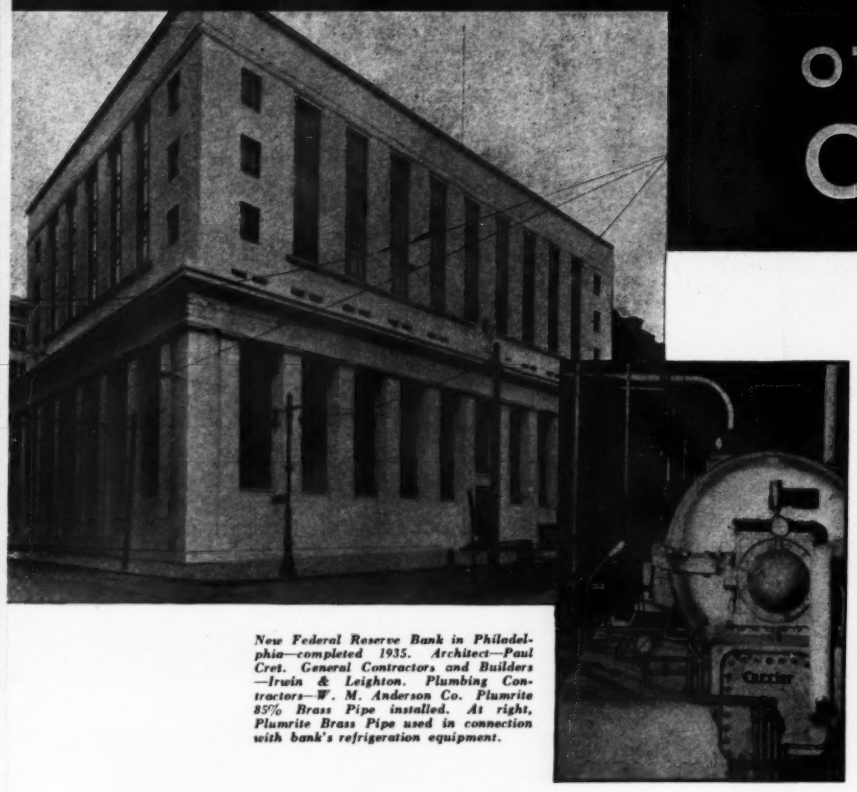
A STATEMENT OF POLICY

Fairbanks-Morse Air Conditioning equipment is and will be sold only through distributors and dealers. Under no condition will it be sold direct to consumers.

Fairbanks, Morse & Co.

FAIRBANKS-MORSE
Air Conditioning

The NEWEST and one of the OLDEST...



New Federal Reserve Bank in Philadelphia—completed 1935. Architect—Paul Cret. General Contractors and Builders—Irwin & Leighton. Plumbing Contractors—W. M. Anderson Co. Plumrite 85% Brass Pipe installed. At right, Plumrite Brass Pipe used in connection with bank's refrigeration equipment.

Betsy Ross House, Philadelphia, birthplace of the American Flag. Built about 1720. Occupied by John and Betsy Ross as upholstery shop in Revolutionary days. Bridgeport Copper Water Tube recently installed to replace worn-out pipe. Contractor—C. F. Bachler & Son.

Both Choose "BRIDGEPORT"

PHILADELPHIA proves the popularity of "Bridgeport" products in a striking manner.

The new Federal Reserve Bank is equipped throughout with Plumrite Brass Pipe. And piping in the historic Betsy Ross House has been replaced with Bridgeport Copper Water Tube . . . Unanimous approval from "Young and Old" alike!

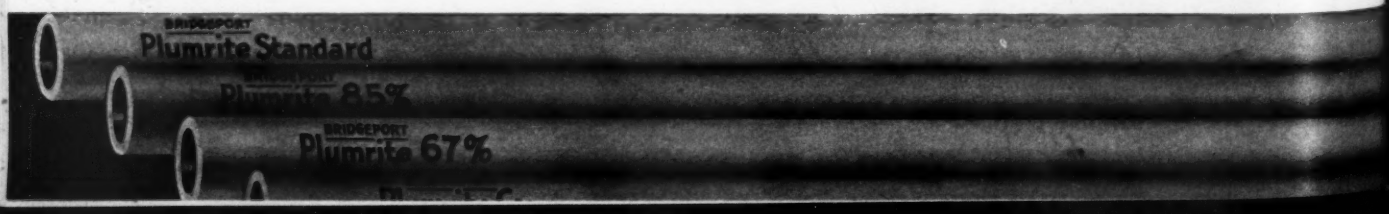
Your selection is backed by the experience of thousands of plumbing contractors when you use Bridgeport Brass Pipe. Brass gives the utmost in quality . . . in strength . . . in *rust-proof, clog-proof* service for hot and cold water lines, air-conditioning systems, etc. For over fifty years Plumrite Brass Pipe has been recognized as standard wherever the finest is wanted. Especially advisable in the larger sizes.

Bridgeport Copper Water Tube, because of its flexibility in coil form, is ideal material for underground service and remodeling work. In straight lengths with soldered fittings, it is excellent for new piping for water lines, steam and hot-water heating, sprinkler systems and air conditioning. With copper water tube you can install *rust-proof* jobs at prices competing with rustable pipe.

All standard sizes of Plumrite Pipe and Copper Tube, as well as Bridgeport Plumbers' Brass Goods, are carried by most jobbers in leading cities and sold *only by recognized plumbing jobbers.* There is one near you. Write us for free booklets on piping.

BRIDGEPORT BRASS CO., Bridgeport, Conn.

ESTABLISHED 1865



ROUND *and* SQUARE

NIB-CO Fittings are *Accurate*

Rigid and inflexible because they are cast, NIBCO copper fittings retain the accuracy of the machining operations which establish roundness of openings and exactness of angles. They may be kept in bins or boxes, or carried in a pocket for that matter, without any necessity for a corrective operation before use. The rugged strength of NIBCO fittings makes the job more substantial, and gives it the stability of appearance that is frequently important.

Copper plumbing has public acceptance for its superiority, and NIBCO fittings have been designed with that high standard of quality always in mind. Ask your jobber about them. Flared tube or solder fittings are available in addition to the new solder fittings for waste and vent lines. The NIBCO line—always a leader in the field of copper plumbing—meets every need.

ALSO BY NIBCO
ACE
TANK FITTINGS
Use Ace tank fittings on your repair jobs and specify them on your new tanks. Ball cock, trip lever and flush valve, available individually or in sets, offer the utmost in service, appearance and convenience. They mean lasting satisfaction to customer and plumber alike.

NORTHERN INDIANA BRASS COMPANY

ELKHART, INDIANA

QUICK MONEY FOR YOU when you tell your customers *"I'll handle the whole job!"*

You can boost your sales with the Crane easy payment plan, fair prices and quality materials

This Easy Payment Plan Makes Modernizers Act!

Crane Finance Plan offers money at government rates —3 years to pay!

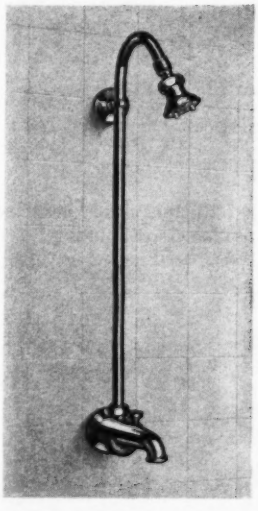
5 Quick Steps

1) Make application
2) Get credit approval
3) Make installation
4) Submit note
5) *Get your money!*

Why do some customers "stall you off," delaying improvements they ought to make at once? Lack of money? Lack of time to deal with carpenter, plasterer, painter?

The Crane Plan removes both these obstacles to a sale! If your customer wants to improve his bathroom, kitchen, plumbing or heating you have everything to offer him. The *complete* Crane line and an easy payment plan that gives him money to buy with.

Tell your customer, "I'll handle the whole job." Give him a complete estimate that covers everything. Your carpenter and plasterer and decorator friends will co-operate. Help your customer select Crane quality materials at the nearest Crane exhibit rooms and supervise the whole job yourself. The Crane cashier will make the credit investigation at no cost to you.



Crane ADDENDA Shower No. C 4344-B easily attached to any built-in tub —has automatic DEVIATOR spout and REFRESHOR head. (left)

Crane Shower No. C 4436-G has a sturdy mixing valve with wall support — 4-inch brass shower-head with removable face. (right)

50% Less Hot Water Used!

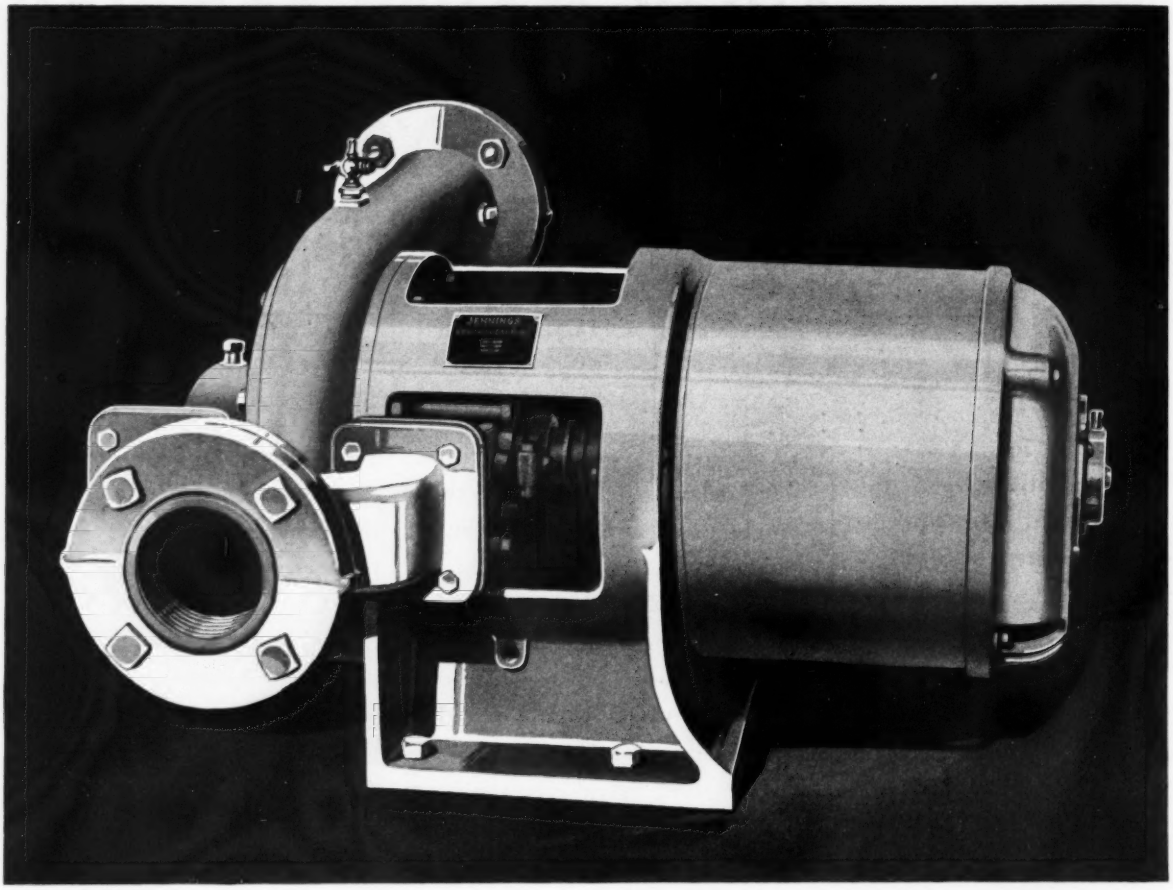
This REFRESHOR head delivers a clear-cut directed shower. It uses 50% less water, provides a better shower and is easily cleaned with a simple twist of the wrist.

CRANE

CRANE CO., GENERAL OFFICES: 836 SOUTH MICHIGAN AVE., CHICAGO, ILL. • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

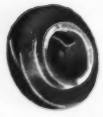
VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL



INDUSTRY GETS A BETTER CENTRIFUGAL PUMP.

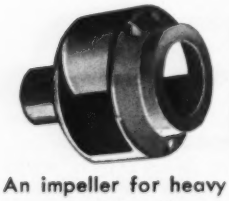
Manufactured in a variety of designs to meet individual process and plant needs. Furnished in standard and self priming types. Standard close coupled type shown above is very compact and may be installed anywhere. Suction and discharge assembled in any desired position. Impeller designs engineered for high efficiency, and in variety to meet any type of service. Special pumps in unit assembly with Nash Vacuum Pumps for combinations of liquid and gas. Bulletin 217 tells the story. Your copy is waiting.

NASH ENGINEERING COMPANY
SOUTH NORWALK, CONNECTICUT, U. S. A.



Non-clog type impeller for solids up to ½ inch.

If solids run up to ⅞ in. this will do the job.



An impeller for heavy sewage with solids up to 2⅜ inches.

Efficient closed impeller for clear liquids

A closed impeller for Double Suction Pumps.

This Air Rotor makes our Suction Centrifugals self priming.

from Street to Bath in Brass

Use the HAYS Copper Plumbing Method to join Hays Quality Brass from Street to Bath. Write for the New 24-page Catalog on Hays Copper Plumbing

from Hays to Wholesaler to Plumber--Since 1869

Strict adherence to the above policy and equally strict adherence to the building of high quality products has made Hays one of your most dependable sources.

Now, when plumbing brass replacements are being made in better volume than in years, you will want this complete Hays Line at your fingertips. You'll want brass goods that will build good will, the kind that satisfy discriminating customers. You'll want the Hays Line, for it features brass to fit all pocketbooks.

Hays Products are conveniently classified and indexed in 7 divisions: Plumbing Brass; Bath Fixtures; Copper Plumbing; Gas Service; Water Service; Iron Products and Tapping Machines. Indicate the divisions that interest you and we'll send a loose leaf catalogue containing the information you need. Clip the coupon today.

HAYS *Since 1869* *Quality* BRASS

COPPER PLUMBING - - - BATH FIXTURES

PLUMBING BRASS GOODS *from Street to Bath*

CLIP THE COUPON TODAY

HAYS MANUFACTURING COMPANY
Erie, Pennsylvania

- ☐ Plumbing Brass
- ☐ Gas Service
- ☐ Bath Fixtures
- ☐ Water Service
- ☐ Tapping Machines
- ☐ Copper Plumbing
- ☐ Iron Products

Name .....

Address .....

City ..... State .....

NRA MEMBER U.S. WE DO OUR PART

Thanks:
"We have been greatly benefited by your assistance on a previous job."
J. J. K.
New Jersey.

BETWEEN OURSELVES

$1,600.00 in Prizes

This issue contains the news that every contractor-dealer has been waiting to hear—the amount and number of prizes that are to be awarded under the Second Big FHA Prize Contest. Here it is: There will be thirty-four prizes with a cash value of $1,600.00.

The First Prize

The First Prize in this All-Industry Contest, as was mentioned in last month's issue, will be a ½-ton, 6-cylinder International Motor Truck with a Panel Body. The cash value of this one prize in itself is $825.00. The dealer who wins this truck is going to have a mighty fine piece of equipment added to his business.

Thirty-Two Other Prizes

In addition to the International Truck, a total of thirty-three cash prizes will be awarded to contractor-dealer winners in the contest. Second prize, cash for a trip to the National Convention, amounting to $200.00. Third prize will be $100.00, and the fourth prize $75.00. The next four winners will be given cash prizes of $25.00 each. In addition, there will be separate prizes of $10.00 for each of the next twenty-five winners. These numerous, substantial prizes make it worth while for every contractor-dealer to enter the contest and exert his best efforts to be among the winners. The complete rules are given in this issue. Read them now! Then get started on your entry immediately!

Supported by the Industry

This Second FHA Contest is truly an All-Industry affair. Letters upon letters have been received from manufacturers and wholesalers commending the contest. That these parties were sincere in their praise is attested by the fact that 134 of them sent cash with their letters to be added to the fund. When a man donates cash to a fund of his own accord, it is a safe bet that he thinks it is a pretty good proposition. Ninety wholesalers and 44 manufacturers did that very thing in this contest, making up the total 134 contributors outside of DOMESTIC ENGINEERING.

Get Started Now

I can't urge each one of you too strongly to get started on your entry immediately. Even if you don't win a prize, you will profit from the business you secure as a result of increased efforts stimulated by the contest. In other words, every contractor-dealer stands to profit whether he wins a prize or not.

Out-Selling the "Chains"

Can the master plumber sell gas ranges, heating units, heating plants, automatic water heaters, refrigerators and many other necessary home appliances in competition with big store advertisers and cut-price dealers? Is the *profit* big enough to justify the effort? These questions, so important to every plumbing contractor, were faced squarely by the J. Hokom Company, plumbers, of Los Angeles, Calif. The company operates four stores and employs seventy persons. Mr. Hokom has an interesting story to tell in this issue on how he meets D.t.u. and chain store competition. His success along these lines should be an inspiration to every dealer who is faced with this problem.

Making Them Pay

One of the major problems facing contractor-dealers today is that of collecting accounts quickly and effectively without jeopardizing the good will of their customers. "You must go after them strong and in person," is the essence of present practice, say effective collectors. "Collection Methods for Today" is the title of a practical and timely article appearing in this issue.

Better Than Expected

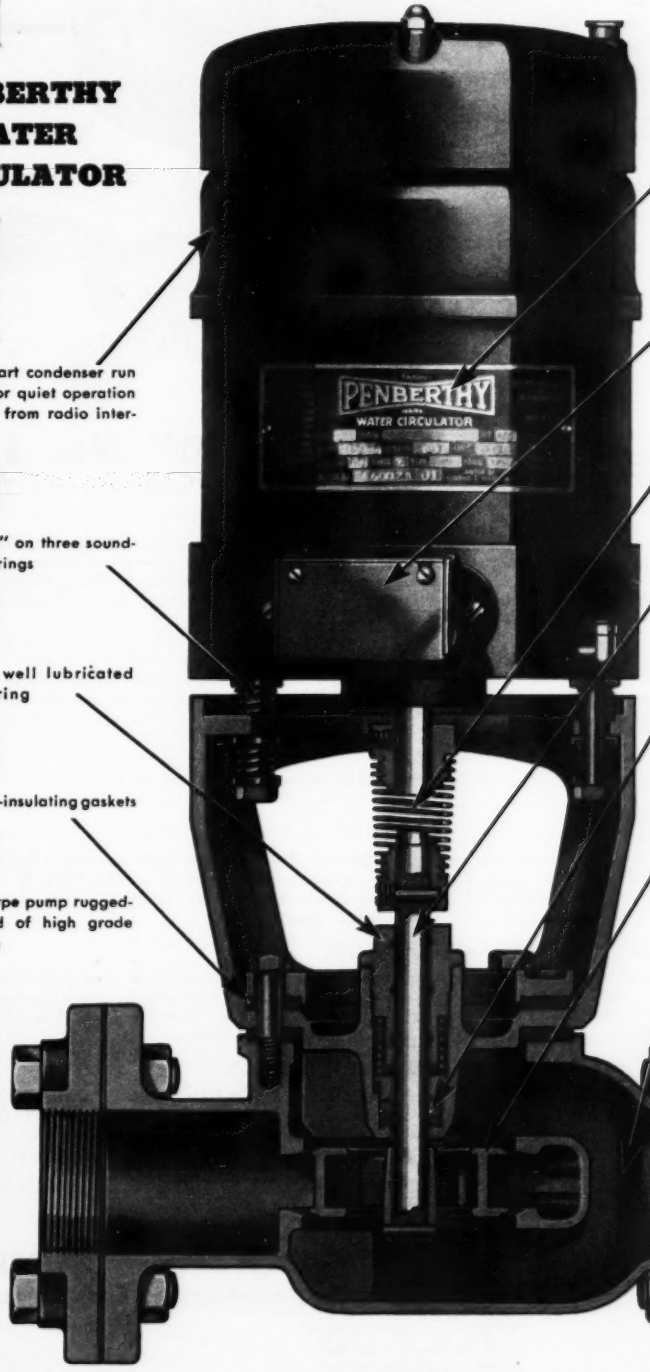
Some interesting facts are revealed in the automatic heat and air conditioning business index in this issue. The index shows that this business increased 28 points during the early part of 1935 compared with the corresponding period of last year. A revised report on oil burner shipments shows that 107,146 units actually were sold in 1934, as against 98,846 units previously reported.

Your Editor

Many Exclusive Features

that improve ANY hot water heating system

PENBERTHY WATER CIRCULATOR



This trade mark assures the highest quality in design, materials and workmanship

Box for easy electrical connections

Condenser start condenser run type motor for quiet operation and freedom from radio interference

Flexible coupling dampens vibration

Monel metal impeller shaft

Motor "floats" on three sound-insulating springs

Self adjusting packing requires no attention; prevents bearing lubricant from entering system

Extra long, well lubricated bronze bearing

Body has large water passages permitting gravity flow when unit not operating

Special sound-insulating gaskets

Double inlet balanced type impeller offers no resistance to gravity flow

Centrifugal type pump ruggedly constructed of high grade steam bronze

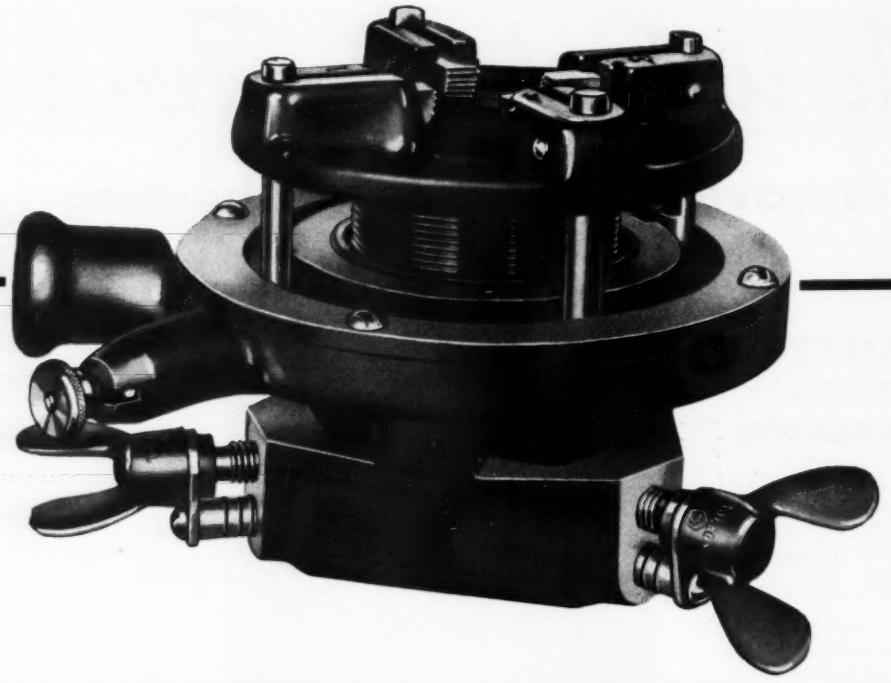
★ CONSTRUCTED OF HIGH GRADE STEAM BRONZE ★

Manufacturers of Quality Products Since 1886

PENBERTHY

Canadian Plant WINDSOR ONTARIO

PENBERTHY INJECTOR COMPANY · Detroit, Mich.



WHAT MAKES THE "TOLEDO" No. IBR

A BETTER 1″ TO 2″ THREADER

1. BETTER WORK HOLDER

Three chuck jaws 1¾-inch wide clamp tool rigidly, accurately to the pipe even though the pipe is cut off crooked. Three large wing head thumb screws assure stronger, more positive grip. Indexed guide posts permit easier centering. Jaws will not mar brass pipe, and will take a 2-inch coupling for the cutting of close nipples.

2. STURDIER CONSTRUCTION

Stronger work holder. Hardened steel taper pins. No soft metal parts to wear. Longer taper pin bearings—no danger of working loose or stretching. No skimping in weight to weaken tool and shorten its length of service.

3. BETTER BALANCE

Ratchet handle near center of tool, making a properly balanced tool as it is put on the pipe. Easier handling.

4. EASIER OPERATION

All moving parts accurately machined, perfectly fitted. Dies hobbed with correct clearance for each size pipe, and ground with proper lip angle, assure easy cutting. "TOLEDO'S" are the only tools using 2-inch high speed steel dies which prevents burning cutting edges on account of the higher peripheral speed when threading 2-inch pipe.

5. SIMPLE TIME-PROVEN CONSTRUCTION

The original "TOLEDO" design of the taper pin and receding die principle has never been improved upon or equalled. "TOLEDO," the pioneer of all easy cutting pipe tools, bases its design and manufacture upon the result of over 30 years experience. No yearly models to become obsolete, but constant improvement as "TOLEDO'S" experience dictates.

6. "TOLEDO" DIES ONLY FOR "TOLEDO" TOOLS

Genuine "TOLEDO" dies should be used only in genuine "TOLEDO" tools. Only "TOLEDO" experience can create and produce the superior quality built into each set of genuine "TOLEDO" trademarked dies, which assures the purchaser the service and satisfaction to which he is entitled when buying extra dies for his "TOLEDO" tools. Look for the trademark and insist upon it.

SPECIFY A "TOLEDO" No. IBR FOR YOUR NEXT THREADING TOOL. YOU WILL FIND IT THE BEST PIPE THREADER YOU HAVE EVER USED.

THE TOLEDO PIPE THREADING MACHINE COMPANY

TOLEDO, OHIO NEW YORK OFFICE AND DISPLAY: 72 LAFAYETTE STREET

"TOLEDO"

SUPERIOR PIPE TOOLS

OUR INDUSTRY

April, 1935

Let's Roll Up Our Sleeves. . . . . and Forget Politics

"Did you read what Johnson said about Huey Long and Father Coughlin when he called them a pair of male sirens who rank as public enemies Nos. 1 and 2?"

"Yes, but you should have heard Father Coughlin over the radio. He said that Johnson was a 'Chocolate soldier' and that he was chosen by the financial interests of the country to lead an assault upon reform measures justified by the sufferings of millions of Americans during the depression."

"Do you know, this thing is getting me worried. Before we realize it, something is likely to happen and we will wake up with Huey Long as dictator. There ought to be a law against—."

"Say, pardon me for changing the subject but how's business. We've got something that the boys are all pepped up over. It looks like a winner. I want to show it to you."

"Well sir, maybe you won't believe me but last month our sales actually ran thirty per cent over sales in the corresponding month last year. From the looks of the orders coming in right now, I think that our gains this month will be even greater. But then, you can't tell. something might happen in Washington."

And thus run conversations which we hear on every hand.

Here Are Some Facts

We are not going to preach. All we want to do is point out some facts which, to us, are the biggest things in the plumbing and heating industry.

First, is the fact that newspaper advertising carried on by plumbing and heating contractor-dealers throughout the country, with their own money, totals almost one-half the volume of the retail newspaper advertising of all the other building trades combined.

Plumbing and Heating in Lead

Second, over 29 per cent of the money loaned as a result of the FHA modernization movement has gone to buy plumbing and heating products and services.

Third, the long standing obstacle to renewed activity in the plumbing and heating industry, namely, financing, has been removed effectively by the operation of the Federal Housing Administration.

Fourth, there is now a pent up market for repairs, remodeling and new homes in the residential field alone, that will require five years to satisfy under normal production conditions.

Lastly, and these are not all of the facts, by any means, even if there might be a slump in some lines of business in the next few months, the plumbing and heating industry is all set to go with a big and growing demand for its products and services. The public wants our products; financing opportunities which have been opened up are making these products available and what is most important, plumbing and heating contractor-dealers, upon whom this industry depends for its success, are doing an outstanding job already, in getting their share of the remodeling dollar.

The plumbing and heating industry is in the lead in the march back to normal business. We can keep it there if we do not lose sight of both our objectives and the progress we have made thus far.

Therefore, we say "Let's roll up our sleeves, take a firm grip, get down to business and forget about Washington."

"We know what's wrong with us!"

A Reader Writes:

"We plumbers know most of the things that are wrong with the plumbing and heating business. All of us know about various forms of competition—mailorder house, D. T. U., and department stores. Of course, there is no reason why we shouldn't as we are closer to all forms of destructive competition than any other branch of our industry. We know just how serious it is but we wish to say that it is not scaring us into a panic of inactivity, regardless of the pessimistic preaching we have forced upon us.

"Your FHA Prize Contest is doing a world of good as it gives all of us a brighter picture of possibilities and even causes some of the pessimistic wholesalers and manufacturers to forget their gloomy preaching and actually give plumbing contractors healthy co-operation. We are doing much more business than a year ago and there has never been a time when plumbing contractors were doing a better selling job than they are doing today."—Signed M. L. E.

This letter typifies the understanding which plumbing and heating contractor-dealers have of conditions as they actually exist in the field. It is only natural that this is so, insomuch as they are on the firing line, so to speak, where either they meet these problems successfully, or else go out of business. In relation to other classes of comparable businesses, plumbing and heating contractor-dealers as a whole, have an admirable record to their credit in the ability they have shown to resist the forces of the depression. Here is one of the definite reasons:

How Mail Order and D.t.u. Is Being Met by Dealer

HOW can you sell gas ranges, heating units, heating plants, automatic water heaters, refrigerators and many other necessary home appliances in competition with big store advertisers and cut price dealers? Is the *profit* big enough to justify the effort?

And what about the many small replacement items displayed so abundantly, attractively and conveniently in every 5, 10, 25 cent and dollar chain store in the land? Can you sell these items with a good profit?

To answer these questions so important to every plumbing contractor, the writer put them squarely before the J. Hokom Company, plumbers, of Los Angeles, California, since 1903. In their thirty-one years of successful operation, selling merchandise in conjunction with repairing, has played a major part in their activities that have built up a huge business, now operating four stores and employing a total of seventy people. The *results* and

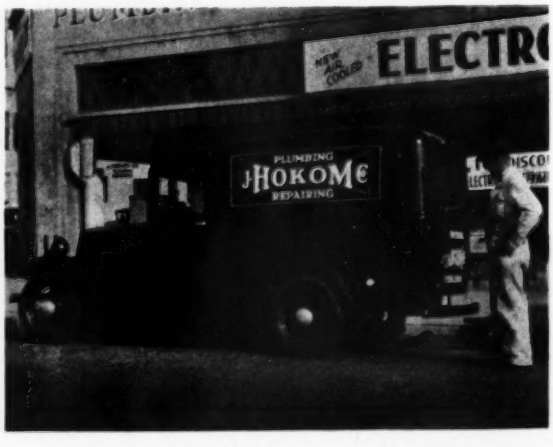


Fig. 1—The illustration at the right shows one of the fleet of trucks which insures ready and complete service for customers of the Hokom company. One of their stores is in the background

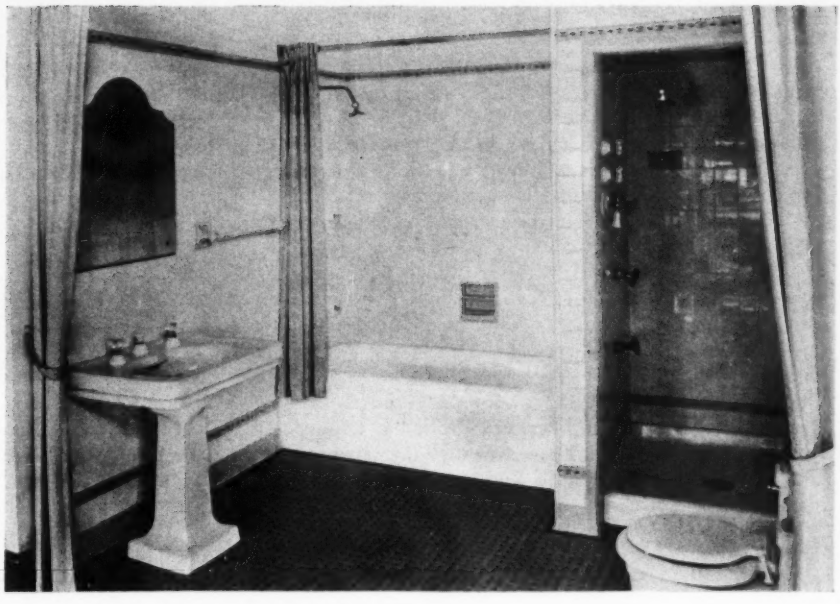


Fig. 2—This set-up indicates the class of displays maintained in this dealer's successful work of meeting cut rate competition

Competition with Success

how they were accomplished, are given below just as Mr. Hokom described their plan.

"Forty per cent of our total business is made up of merchandise sales, sixty per cent repairs. As the purpose of every business is to make legitimate profits, always having in mind the basic principle of giving value and service to the buyer, suppose we analyze the profit possibilities on merchandise sales.

"We pay our men $1.10 an hour and charge $1.75. No repair job obviously, can pay more than 65 cents profit per hour. Overhead considered, this profit is all too low. On a two hour job, the gross amounts to $1.30. In two hours and often less, the workman who is also a trained salesman, may turn in a sale of a water heater, circulating type room heater, refrigerator or fixture that affords a gross profit of $6.00, $25.00 or $60.00 or more, depending on the size, resale price and number of units.

"From this, it is obvious that, regardless of ability, repair profits are limited to a given figure. Profits on the sale of merchandise are limited only by the buyer's needs and to the ability of the organization's personnel to demonstrate and sell those needs.

HOW ONE WATER HEATER WAS SOLD

"Here is a case in point. A home owner needed a new water heater very badly. He was, in the vernacular, *tight*. He would not buy 'today.' That night his heater blew up, soaked and warped his hardwood floors, costing him a $100 repair bill, and besides, he had to buy the heater anyhow. That incident has turned many a new sale in this organization.

"Our basic program is to sell and install what the customer ought to have. This wins and holds their confidence. It is a part of the training of every employee on the job, and each understands that *selling* merchandise is as important a part of his job as doing good work. Then when the goods are sold, make the delivery and installation as quickly as possible before the buyer has a chance to change his mind."

"But how," I asked, "do you enthuse and train your men to close sales for appliances, fixtures and home equipment beyond the immediate and actual repair needs of the customer?"

"That, too, is a definite part of our program. First, we help to create prospects that our men on the job and our estimators follow up. We distribute from door to door, 10,000 small advertising blotters every month, 2,500 in a radius around each of our four stores. Once each year, we deliver 10,000 large size, attractive calendars among our customers and prospects.

"It is just as important for us to advertise as it is for the big stores and chains—for, after all, doesn't their financial success depend almost entirely upon intelligent, consistent advertising, backed up by irresistible floor and counter displays?

CHAIN STORE PLAN GETS BUSINESS FOR DEALER

"Well, this same plan gets business for us; still, I would say the advantage of closing a sale is in our favor, since we follow it up with the personal call, which, beyond doubt, is the highest and best form of selling. It is surprising, too, how many good sales are made right in the customer's home without any demonstration whatsoever, other than the salesman's talk and showing pictures of the product. When that fails, we urge the prospect to visit our nearest store for the final demonstration that completes the sale.

"We have found one of the best outlets for the sale of equipment and new installations is among rental property owners, individual homes, flats, apartments or courts.

Why? Such habitations become obsolete in a few years. The owner of rental property who does not keep up to date, faces positive losses through vacancies or lower rentals or both.

"For example, one owner of a very fine apartment building suffered a constant turn-over of tenants. In fact, he always had several vacancies, while a neighboring court which the apartment owner classified as shacks, had little or no tenant turn-over, and never carried a vacancy longer than a week.

"He was curious to know how and why this was so. One day he asked: 'How is it that you never have any vacancies among your shacks, while in my fine, big apartment there are always vacancies, and people move in, but do not stay long?'

"Here was the other's answer: 'My courts may be just shacks to you, but they are profitable to me. If you will come in, I will show you *why* my tenants stay, and pay me good rentals. You see, people nowadays demand mechanical refrigeration. Ice boxes are out. They want gas or electric refrigerators. That alone helps to rent my rooms, but, in addition, I have the best of fixtures, large modern sinks, drain boards and bath tubs combining overhead showers. When a tenant does move away, I do not merely clean and wash the rooms—I paint them. And, the beds in my furnished apartments have inner spring mattresses. When you throw out your old fashioned hard sleepers, paint up your rooms and modernize with practical refrigerating units, your apartments like my shacks will rent readily, and at a price that will cover the cost of such necessary installations.'

SALES EFFORTS ON MODERNIZATION PLAN

"That condition is a commonplace, so we are constantly working, bending our sales efforts in this modernization plan. We demonstrate to the property owner that new bath rooms, kitchens, new sinks, new drain boards and the like will not only yield a higher income and insure prompt occupancies, but will prove well worth the cost even though the owner is using it for his own home. The profits on this type of modernization are right, and are beyond the pale of that intensive competition that goes with installations in new homes under construction.

"This practice is not new with us. We have followed it a long time, but with the wide publicity now being given to the modernization program unquestionably it will be easier to sell the idea, and of course to many more people. On such modernization features, we take the entire job if the customer prefers it, through a desire to have payments all in one place. By this, we mean the plumbing, fixtures, appliances, painting, tile, roofing and carpenter work. We finance the entire job, but of course sublet the other work that does not fall into our own sphere of operations.

(Continued on Page 162)

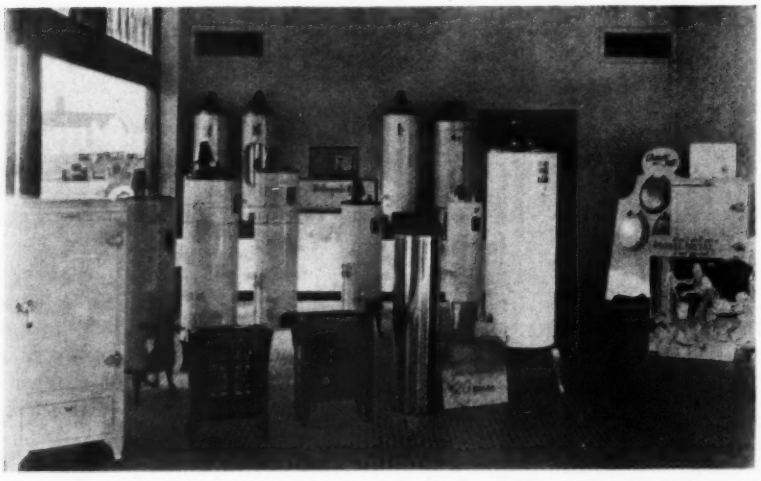


Fig. 3—Above is a combination window and showroom display of water heaters, space heaters and electric refrigerators. Demonstrations form a big factor in this dealer's sales

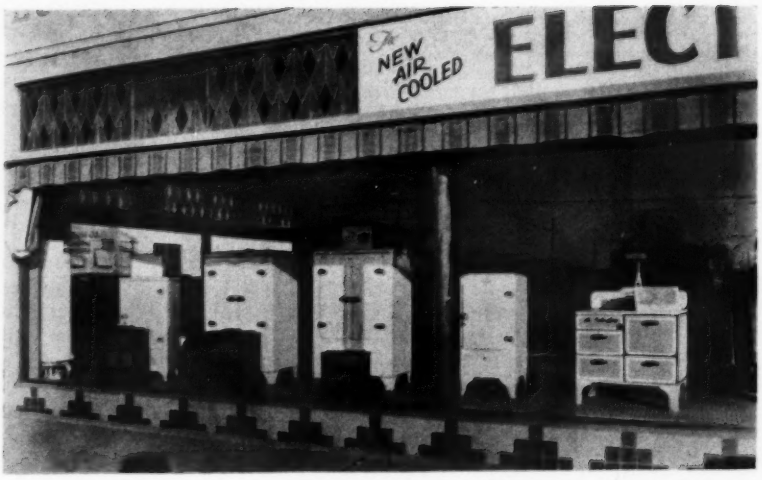


Fig. 4—At the right is an outside view of one of the show windows. Extra attention is directed to this contractor dealer by means of the temporary, but attractive, sign

Fig. 1—Front of the Newark passenger station building and track canopies as far as the east portal. Photograph is made from architect's model

The Mechanical Equipment of the Newark Passenger Station

By Harold L. Alt*

THIS article has been written so as to be of interest and practical value to the reader even if he reads this alone and does not refer back to the first installment of this series and does not follow up by reading the next and concluding installment. Needless to say, however, a better understanding of the entire project would be gained by studying the three articles.

It probably should be called to the attention of the reader before proceeding farther that it was impossible to construct the Newark passenger station all at one time owing to the necessity of keeping the tracks of the old line in operation until three tracks of the new development were put into service at which time the old tracks were torn out and the portion of the new station coming into this area was completed. This necessitated the stopping of the building, and all services in the building, at a point just north of the old main line and providing sufficient capacity at these points to serve the south half of the building which at that time had been only tentatively sketched up with the possibility of being somewhat altered in detail when the complete plans were finally developed.

This means that not only were the steam and service lines stopped off at the end of the first construction but that the ventilation work was similarly capped off and left ready for future connection and extension. The air quantities required for the second portion of the building were estimated closely and the equipment installed was made of sufficient capacity to care for the later construction of the second portion of the building.

There are two separate supply systems of ventilation consisting of the general supply with an air capacity of 56,000 c.f.m., for furnishing an air supply to all sources requiring it outside of the shops; and the shop supply with a capacity of 35,800 c.f.m., which furnishes air to the shops and stores. There are, however, nine separate exhaust systems consisting of the general exhaust, with a capacity of 25,800 c.f.m.; the shop exhaust, with a capacity of 20,465 c.f.m.; the toilet exhaust, with a capacity of 10,970 c.f.m.; the kitchen exhaust, with a capacity of 15,500 c.f.m.; the taxi stand exhaust, with a capacity of 24,000 c.f.m.; the bus terminal exhaust, with a capacity of 66,000 c.f.m.; the refrigerator room exhaust, with a capacity of 4,000 c.f.m.; the battery charging room exhaust with a capacity of 4,000 c.f.m., and the transformer room exhaust, with a capacity of 6,000 c.f.m.

LOCATION OF VARIOUS FANS

All of the supply fans are located in the supply fan room. The exhaust fan room is located immediately below with the discharge exhausts carried up through the supply fan room and discharged vertically through the roof. In the exhaust fan room are located the general exhaust fan, the shop exhaust fan, the toilet exhaust fan, the kitchen exhaust fan and the refrigeration room exhaust fan. The exhaust fans for the taxi drive, the bus terminal, the transformer room and the battery charging

*Building Equipment Engineer for Gibbs and Hill, Consulting Engineers, New York City.

The presentation to our readers of this complete description and digest of the mechanical equipment installed in the new passenger station now being completed in Newark, New Jersey, has been made possible through the courtesy of the Pennsylvania Railroad.

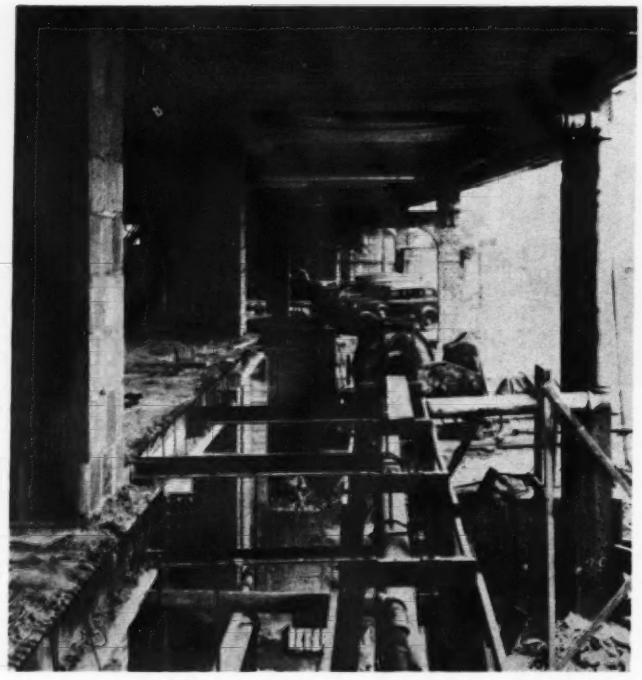


Fig. 2—This view shows the piping at the temporary end of the present building construction

are located in different parts of the building to avoid unreasonably long runs of duct work and the expense of such long runs.

The outside air supply is taken through louvred openings placed high up on the east wall of the station and enters a plenum chamber from which both supply fans take their suction. From this plenum chamber, the air passes through an air filter of the rotating oil type, a preheater, which raises the air temperature to a degree suitable for the humidifying to be done in the air washer, through the air washer, and then through a reheater where the air is raised to the temperature at which it is desired to admit it to the room. From the rcheater, the air goes to the duct system and is discharged into the spaces to be ventilated through various types of inlets.

The air quantities used in the design of the ventilating systems were based on various standards as will be seen by the following: In the shop supply, the air quantity was based on a minimum of 2 c.f.m. per sq. ft. of floor area, while the shop exhaust carries about 60 per cent of the supply air and may be used for recirculation if it is decided to install cooling at some later date. The general supply air for such spaces as the main waiting room, the bus waiting room, the concourses, and so on, is based on 20 c.f.m. per person in the main waiting room and a complete air change every 10 minutes in the other spaces, in other words, six air changes per hour. The exhaust from the same spaces amounts to about 50 per cent of the supply, this being necessary in order to maintain a slight outward air pressure on the building which not only will eliminate much of the inward leakage but is a requirement of successful cooling should this ever be installed.

The exhaust system installed for the toilets is adequate to provide 10 air changes per hour or a complete renewal of air every six minutes. This air enters the toilets from the surrounding concourses, thus having the toilet exhaust also act as an exhaust air remover for the concourses. The kitchen exhaust also provides for air removal at the rate of one air change every three to four minutes and draws this air across the serving counter between the kitchen and lunch room so as to act as an exhaust for the lunch room. This prevents the penetration of both heat and odor into the lunch room from the kitchen by having a positive reverse flow of air across this counter and into the kitchen.

The refrigeration room, in which will be located the compressor, condenser and cooler for the kitchen refrigerator service, is ventilated in accordance with the local regulations. The ventilation for the taxi stand is for the purpose of removing smoke and odor which on certain days might collect under the tracks and prove a nuisance and an air change for this space of about 3 changes per hour is provided. Similar treatment is accorded the bus terminal on the opposite side. In the battery charging room, air is removed to get rid of the fumes and gas emanating from the battery cells when charging or being serviced, these batteries being used to operate the electric baggage trucks. In the transformer room, sufficient air is removed to provide for the carry-

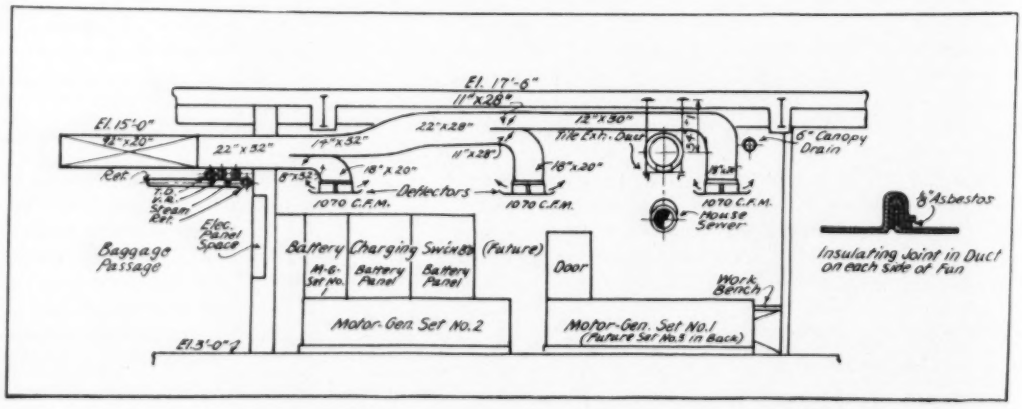


Fig. 3—Arrangement of battery charging room and motor generator room ventilation

Fig. 4—Here is a view of the ducts and piping on the ceiling of the basement corridor. An idea of the construction of the ductwork is gained from this

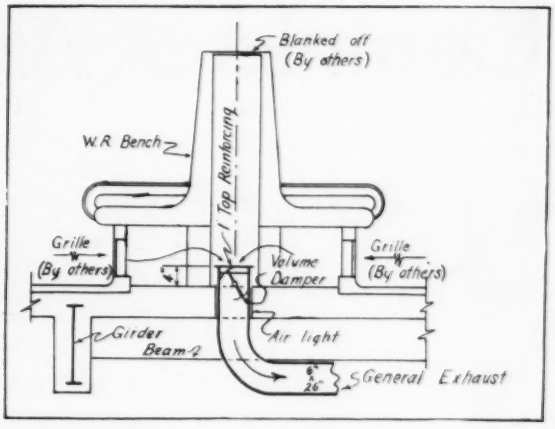


Fig. 5—This detail shows the method of exhausting air from the main waiting room by means of ducts under alternate benches where no radiators are installed

ing away of the electrical heat produced by the losses in the transformers and to provide against a temperature rise in the room of not to exceed 10 degrees. See arrangement shown in Fig. 1.

The air inlets in the main waiting room are in the ceiling and downward ventilation is employed with exhausts taken out from under the middle benches, every alternate set of benches being used for this purpose. Fig. 2 illustrates the method of supplying and exhausting air in this room. The lunch room is similarly treated except that the exhaust leaves via the kitchen as already noted. In the concourses the air is supplied through ornamental painted steel grilles distributed around the length of these passages as evenly as the architectural conditions will permit.

DISTRIBUTION OF INCOMING AIR

In the shops and stores a special circular combination type of fixture is used. The incoming air is distributed out in a radial horizontal direction while the exhaust air leaves through a circular register in the bottom of the fixture. The purpose of this fixture is to secure thorough mixing of cooled air with the room air before dropping to the floor and to secure the removal of the same air after it has become heated and has again risen to the ceiling. These outlets are equipped with volume dampers so that the air flow in both supply and exhaust can be controlled.

Although the term "ventilation" has been used throughout this description to designate the supplying and removal of air, perhaps air conditioning would be a more modernized term as the system during the winter will give "simultaneous control of air temperature, humidity and air motion" which is the definition of air conditioning. It also will do the same during the summer if a refrigeration plant is added later, for which suitable space has been reserved in the basement with two 6 in. brass pipe lines run from the refrigeration space up to the fan room for the circulation of cooled water to and from the air washer if it is later desired to change to cooling. Beyond this, is the installation of air filters to clean the outside air and the provision of space and duct connections so that ionizing apparatus may be installed at any time desired.

The air distribution system is constructed of copper bearing galvanized steel throughout except in the case of the battery charging room where lead covered copper and monel metal are used and in the case of the transformer room where a masonry shaft is provided for both supply and exhaust air. All ducts are stiffened with galvanized iron angles on large sizes and with galvanized standing seams on the small sizes. The air velocities used in the duct systems vary from 1,000 f.p.m., as a maximum, down to 400 f.p.m., as a minimum, with suitable graduation of velocity between the fan discharge and the far end of the system.

One of the requirements of the duct system was that any insulation employed must be fireproof. A 1 in. thickness of rock wool, finished with a coat of plastic asbestos with a hard plaster finish was installed. All

(Continued on Page 160)

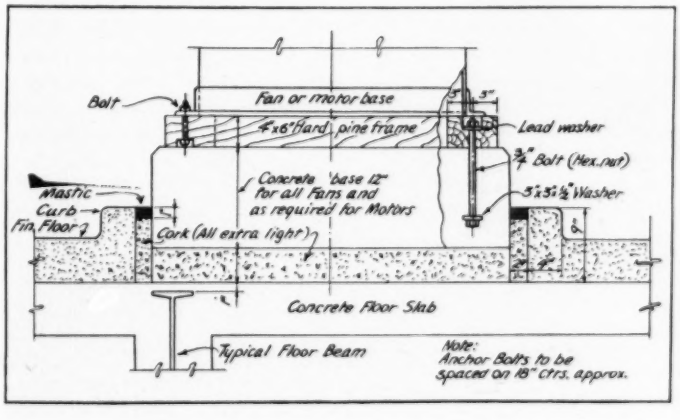
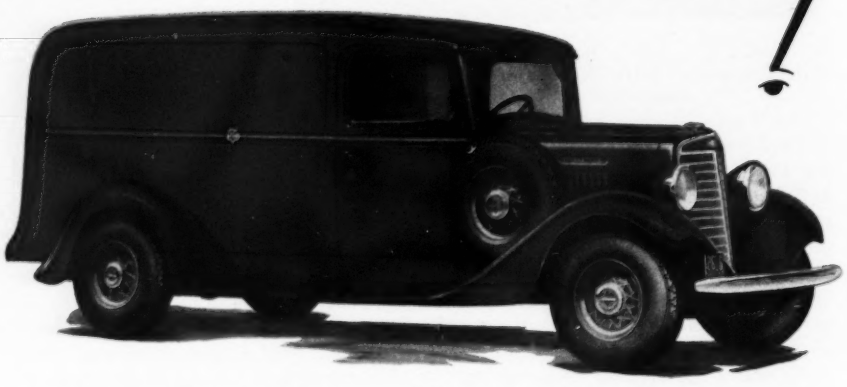


Fig. 6—At the left is a cross section view of a typical fan and motor foundation which shows sound and vibration proofing effected by the means of corkboard

Complete Announcement of 1st. Prize!



This illustration shows the one-half ton, six-cylinder International motor truck which is to be awarded as the first prize in this contest

THIS second FHA prize campaign has been launched for the purpose of helping to obtain more business for all of the branches of the plumbing and heating industry. It takes into account a number of factors, chief of which is that the plumbing and heating contractor-dealer is the one who finally makes the ultimate sale of our industries products and services to the consumer or home owner. Therefore, the campaign has been designed so as to give the contracting and dealership branch of our industry the greatest possible amount of encouragement and incentive in going out and selling.

Also, this campaign takes into account the fact that every day, new sales ideas and sales getting methods are being developed in our industry in the interest of bringing plumbing and heating business back to normal. Underlying all of these methods are certain fundamental ideas, many of which are just as applicable to the conditions in, say, Portland, Maine as in Portland, Oregon. Contractor-dealers who enter this contest by submitting letters and descriptions of their experiences and methods in making sales will benefit from the publication of the experiences and ideas of their fellow-dealers. In this way, the campaign not only will serve as a sales stimulus but it will give those in our industry practical and working ideas to help them in their individual efforts.

Further than this, the campaign recognizes that the FHA has provided the necessary means of making financing possible for remodeling and repair work. The $300,000,000.00 estimated up to March 23, as the value of the modernization and repair work generated through FHA is being enlarged by increasing amounts daily as the entire movement gets under way. Thus far, the plumbing and heating industry has obtained over twenty-nine cents of every FHA dollar spent. Plumbing and heating contractor-dealers are in a position to hold this outstanding lead and even to increase it.

This is a campaign for the entire industry. There are places in it for the manufacturers, the wholesalers, the contractor-dealers, the manufacturers' salesmen and representatives, the wholesalers' salesmen and representatives and others. Manufacturers and wholesalers have shown their positive and active support by contributing cash amounts which have gone to help make up the cash prize award fund. Beyond this, they are working both directly and through their salesmen and representatives to assist and encourage contractor-dealers in every way possible to sell through the opportunities opened up by FHA.

Ideas which were entered in the first FHA prize contest, and which won prizes, are given in this issue beginning on page seventy-one

Second FHA Prize Contest

What You May Win

1st Prize, One-half ton, six cylinder International Truck, Value	$825.00	10th Prize	$ 10.00	24th Prize	$ 10.00
2nd Prize, Cash for Trip to N A M P Convention in Chicago	200.00	11th Prize	10.00	25th Prize	10.00
3rd Prize	100.00	12th Prize	10.00	26th Prize	10.00
4th Prize	75.00	13th Prize	10.00	27th Prize	10.00
5th Prize	50.00	14th Prize	10.00	28th Prize	10.00
6th Prize	25.00	15th Prize	10.00	29th Prize	10.00
7th Prize	25.00	16th Prize	10.00	30th Prize	10.00
8th Prize	25.00	17th Prize	10.00	31st Prize	10.00
9th Prize	25.00	18th Prize	10.00	32nd Prize	10.00
		19th Prize	10.00	33rd Prize	10.00
		20th Prize	10.00	34th Prize	10.00
		21st Prize	10.00		
		22nd Prize	10.00	Total value of Prizes	$1,600.00
		23rd Prize	10.00		

RULES OF THE CONTEST

1. To win a prize, all you have to do is give us evidence of how you are taking advantage of the Federal Housing Act to sell plumbing and heating equipment.
2. This evidence may consist of one or more of the following items: A. Write a letter telling how you are using FHA. B. Send us copies of your newspaper advertisements, samples of your direct mail pieces or samples of your other advertising matter. C. Have photographs taken of your remodeling work, both before and after it is done, of your show windows or of your showroom.
3. Skill in writing will not be considered.
4. The enterprise and ingenuity of the contractor-dealer in using FHA to sell plumbing and heating products and services will be the determining factor.
5. The method, preferably, should have resulted in an order although this is not necessary. The size of the job or the amount of the sale will not necessarily enter into the decision.
6. Any contractor or dealer may enter and is eligible for a prize. In case of a tie, duplicate prizes will be awarded.
7. The judges will be selected from nationally known figures and will be chosen for their knowledge of the plumbing and heating business and of the great national housing campaign. Their names will be announced in the May issue. The decision of the judges will be final.
8. All entries must be submitted or postmarked not later than midnight, June 8, 1935. Awards will be made as soon thereafter as possible. Contractors and dealers may send in more than one entry if desired.
9. In order to report promptly to its readers the best and most practical sales ideas so as to promote business in general in our industry, DOMESTIC ENGINEERING has the full privilege to use and publish all or any part of the material received.
10. Letters should be sent to the Prize Editor, DOMESTIC ENGINEERING, 1900 Prairie Avenue, Chicago.

Everybody's Backing Second FHA Prize Campaign

Manufacturers who have contributed to prize fund

American Brass Co., The; 25 Broadway, New York, N. Y.
American Radiator Co.; 40 West 40th St., New York, N. Y.
American Sanitary Mfg. Co.; Abingdon, Ill.
American Seat & Tank Co.; Abingdon, Ill.
Anderson Mfg. Co.; 195 Albany St., Cambridge, Mass.
Autovent Fan & Blower Co.; 1805 N. Kostner Ave., Chicago, Ill.
Beaton & Cadwell Mfg. Co., The; New Britain, Conn.
Bell & Gossett Co.; 3002 Wallace St., Chicago, Ill.
Burnham Boiler Corp.; Irvington, N. Y.
Chicago Faucet Co., The; 2700 N. Crawford Ave., Chicago, Ill.
Chicago Granitine Mfg. Co.; 4920 S. Rockwell St., Chicago, Ill.
Clow & Sons, James B.; 201 N. Talman Ave., Chicago, Ill.
Crane Co.; 836 S Michigan Ave., Chicago, Ill.
Excelso Products Corporation; 65 Clyde Ave., Buffalo, N. Y.
Federal Radiator Co.; Zanesville, Ohio.
Fitzgibbons Boiler Co., Inc.; 570 Seventh Ave., New York, N. Y.
Gorton Heating Corp.; Cranford, N. J.
Gregory & Co., J. G.; 228 N. LaSalle St., Chicago, Ill.
Grinnell Company, Inc.; Providence, R. I.
Hajoca Corporation; P. O. Box 1524, Philadelphia, Pa.
Hays Mfg. Co.; 12th & Liberty Sts., Erie, Pa.
Hoffman Specialty Co.; 500 Fifth Ave., New York, N. Y.
International Nickel Co., The; 67 Wall St., New York, N. Y.
Kinsey & Mahler Co.; Cor. Adams and Harrison Sts., Peoria, Ill.
Maid-O'-Mist, Inc.; 43 E. Ohio St., Chicago, Ill.
Martin Metal Mfg. Co., The; 900 E. Second St., Wichita, Kan.
McDonnell & Miller; Wrigley Bldg., Chicago, Ill.
Mercoid Corp., The; 4201 Belmont Ave., Chicago, Ill.
Mueller Co.; Decatur, Ill.
Never Split Seat Co.; Evansville, Ind.
Nye Tool & Machine Works, The; 4120 Fullerton Ave., Chicago, Ill.
Peterson Tool Co., Clifford; 123 N. Jefferson St., Chicago, Ill.
Pierce, Butler & Pierce; 149 Broadway, New York, N. Y.
Ruberoid Company, The; 500 Fifth Ave., New York, N. Y.
Russell & Co., W. A.; Grand Central Terminal Bldg., New York, N. Y.
Sexauer Mfg. Co., Inc., J. A.; 2503 Third Ave., New York, N. Y.
Somerville Co., Thos.; First & N Sts., N. E., Washington D. C.
Speakman Co.; Wilmington, Del.
Vogel Co., Joseph A.; Wilmington, Del.
Walworth Co.; 60 E. 42nd St., New York, N. Y.
Watts Regulator Co.; 250-252 Lowell St., Lawrence, Mass.
Weil-McLain Co.; 641 W. Lake St., Chicago, Ill.
Whitehead Metal Products Co. of New York, Inc.; 304 Hudson St., New York, N. Y.

Wholesalers who have shown support with contributions

Behrer & Co., Inc.; 77 Beekman St., New York, N. Y.
Belknap Hdw. & Mfg. Co.; 111 E. Main St., Louisville, Ky.
Bennett Co.; 282 Somerville Ave., Somerville, Mass.
Biggs Pump & Supply Co.; Brown, Erie & 13th Sts., La Fayette, Ind.
Boston Pipe & Fittings Co., Inc.; 149 Sidney St., Cambridge, Mass.
Bourneuf Corp., The; 213 Oxford St., Lynn, Mass.
Busser Supply Co.; Lewisburgh, Pa.
Case & Son Mfg. Co., W. A.; 33 Main St., Buffalo, N. Y.
Central Metal and Supply Co.; 609 E. Lombard St., Baltimore, Md.
Central Supply Co.; 312 Third St., S., Minneapolis, Minn.
Connecticut Plumbing Supply Co., The; Stamford, Conn.
Cooper Supply Co., Harry; Springfield, Mo.
County Seat Plumbing Supply Co., Inc.; 179 Main St., Mt. Kisco, N. Y.
Desco Corp.; 211 Shipley St., Wilmington, Del.
Dimock & Fink Plumbing Supply Corp., 3497 Third Ave., New York, N. Y.
Dingman Plumbing & Heating Supply Co., Inc.; 15 S. 6th Ave., Mt. Vernon, N. Y.
Economy Sales Company, The; Post Office Block, Toms River, N. J.
Egyptian Supply Co.; Christopher, Ill.
Elizabeth Hardware Co.; 137 New Brunswick Ave., Perth Amboy, N. J.
Farr-Better Supply Co., The; 315 Kentucky Ave., Paducah, Ky.
Gallison Co., The Wm. H.; 367 Atlantic Ave., Boston, Mass.
Garrity Co.; 7123 South Chicago Ave., Chicago, Ill.
Greenpoint Supply Co., Inc.; 351 Leonard St., Brooklyn, N. Y.
Hahn, Charles; 0204 Fifth St., Lewiston, Idaho.
Harris Pump & Supply Co.; 320 Second Ave., Pittsburgh, Pa.
Heating Supply Co.; Lacock & Sundusky Sts., North Side, Pittsburgh, Pa.
Howard Plumbing Supply Co.; Howard & Court Sts., Newark, N. J.
Hunter & Co., Alfred J.; 252 Market Ave., Muskegon, Mich.
Ideal Supply Co., The; 1105 Summit Ave., Jersey City, N. J.
Inland Supply Co.; 4630 W. Augusta Blvd., Chicago, Ill.
Jahns Supply Co.; 1715 Commerce St., Fort Worth, Tex.
Johnson, Harry; 716 South St., Philadelphia, Pa.

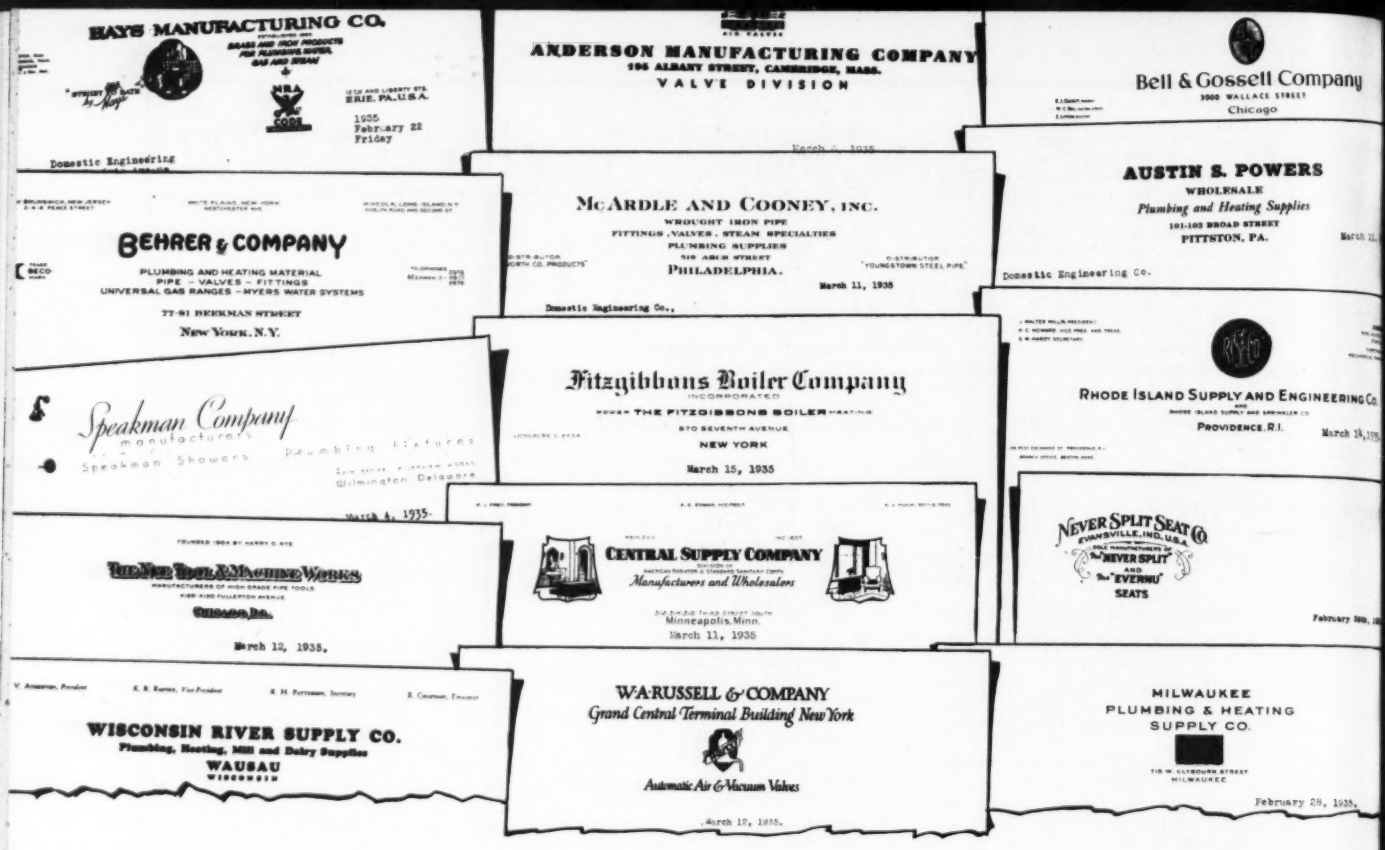
Kahn, Samuel R.; 554 West 36th St., New York, N. Y.
Keiser-Van Leer Co., The; 505-507 North East St., Bloomington, Ill.
Kretschmer - Tredway Co.; 9th and Washington Sts., Dubuque, Ia.
Kurtz Co., L. H.; 312 Walnut St., Des Moines, Ia.
Lauterbach & Co., A. C.; 1039 N. Gay St., Baltimore, Md.
Lebanon Plumbing Supply Co., Inc.; 5th St. & Reading R. R., Lebanon, Pa.
Lehigh Valley Supply Co.; 3rd & Oak Sts., Allentown, Pa.
Leighton Supply Co.; Fort Dodge, Ia.
Levine, Samuel; 257 Third Ave., New York, N. Y.
Liberty Plumbers Supply Co., Inc.; 18-24 William St., Stapleton, S. I., N. Y.
Mack Supply Co., 17 Madison St., Wilkes-Barre, Pa.
Manners-Motz Co.; Sixth and Rosabel Sts., St. Paul, Minn.
McArdle & Cooney, Inc.; 519 Arch St., Philadelphia, Pa.
Marshall-Wells Co.; Billings, Mont.
McAuliffe & Burke Co.; 19-29 Troy St., Boston, Mass.
Mead Co., Inc., John J.; 30 Hanson Place, Sayville, N. Y.
Merkel Bros. Co., The; Burbank St. & C. L. & N. R. R., Cincinnati, Ohio.
Merrimack Valley Supply Co.; School Street at Western Ave., Lowell, Mass.
Mid - City Plumbing Supply Co.; 1105 S. Western Ave., Chicago, Ill.
Miller Supply Co.; Sawyer Ave. at 21st St., Chicago, Ill.
Milwaukee Plumbing & Heating Supply Co.; 715 W. Clybourn St., Milwaukee, Wis.
Mineola Plumbing Supply Co., Inc.; 69-71 Jericho Turnpike, Mineola, N. Y.
Mott Co. of Pennsylvania; 1625 Haddon Ave., Camden, N. J.
Nelson Co.; 2604 Fourth Ave., Detroit, Mich.
Newark Plumbing Supply Co., Inc.; 146 Avon Ave., Newark, N. J.
Orlowitz Co., Inc., Louis B.; 632 Arch St., Philadelphia, Pa.
Orlowitz Co., Louis B.; 632 Arch St., Philadelphia, Pa.
Pierce-Perry Co.; 236 Congress St., Boston, Mass.
Plumbers' & Factory Supplies, Inc.; 41 W. Vine St., Columbus, Ohio.
Powers, Austin S.; 101 Broad St., Pittston, Pa.
Rhode Island Supply and Engineering Co.; 156 W. Exchange St., Providence R. I.
Rockford Plumbing Supply Co.; Rockford, Ill.
Roosevelt Co., W. A.; La Crosse, Wis.
Sales & Co., Murray W.; 801 W. Baltimore Ave., Detroit, Mich.
Saltser & Weinsier, Inc.; 173 Cook St., Brooklyn, N. Y.
Soholmo, Inc.; 236 N. Third St., Columbus, Ohio.
Somerset Plumbing Supply Co.; 13 Somerset Place, Plainfield, N. J.
Springfield Plumbing Supply Co.; Chestnut & Franklin Sts., Springfield, Mass.
Standard Plumbing Supply Co.; 131 W. Girard Ave., Philadelphia, Pa.
Sullivan County Plumbing & Heating Sup. Co., Inc.; Liberty, N. Y.
Sullivan Hardware Co.; Anderson, S. C.
Superior Supply Co.; 2205 Central Parkway, Cincinnati, Ohio.
Swank Hardware Co.; Main and Bedford Sts., Johnstown, Pa.
Tillinghast Supply Co., The L. H.; 162 Dorrance St., Providence, R. I.
Thill Supply Co., Inc.; 1035 Putnam Ave., Brooklyn, N. Y.
Trumbull Plumbing Supply Co.; 133 Dawson St., S. W., Warren, Ohio.
Universal Supply Co., The; 122 E. Main St., Newark, Ohio.
Van Denberg Supply Co.; 522 Cedar St., Rockford, Ill.
Vogel & Sons Co., P. A.; 321 W. Main St., Louisville, Ky.
Walworth California Co.; 235 Second St., San Francisco, Cal.
Webb Supply Co.; 38 Park St., Framingham, Mass.
Whitney & Ford Co.; 4311 S. Western Blvd., Chicago, Ill.
Willow Grove Plumbing and Heating Supply Co.; 54 Old York Road, Willow Grove, Pa.
Wigman Co.; 313 Perry St., Sioux City, Ia.
Winterbottom Supply Co.; Waterloo, Ia.
Wisconsin River Supply Co.; Wausau, Wis.
Yelton-Weaver Supply Co.; 215 N. Eighth St., Springfield, Ill.
Young & Vann Supply Co., The; 1725-1731 First Ave., Birmingham, Ala.

What They Say about It —

Excerpts from letters of manufactures and wholesalers

ONE hundred thirty-four manufacturers and wholesalers have taken definite action to show their support of the Second FHA Prize Campaign, by contributing to the fund which makes up the cash awards. Forty-four of these are manufacturers and ninety are wholesalers. This does not take into account the many who have both written and told us personally of their interest in this promotional effort which has been designed for the purpose of bringing more business to the plumbing and heating industry. Neither does it indicate the requests we have had for over fifteen thousand copies of reprints of the announcement of this campaign. Incidentally, reprints of the six pages (from pages 42 to 47 inclusive) in this issue are available without charge to those in our industry who have a need for them, up to the limit of our supply.

As an indication of the enthusiastic support which is being given this campaign there are the following excerpts taken from the letter of a manufacturer in New York City. He says, "We think this plan is a very excellent one." A wholesaler in New Jersey tells us, "It would seem to us that any contest with such motives as your FHA prize campaign should merit the support of every manufacturer and wholesaler in the industry." Another manufacturer states, "I think the idea as a whole a very splendid one and it should create a tremendous amount of interest and activity in the industry." Still another one tells us, "It



is indeed a pleasure to send our contribution along to you as I personally feel that you are fostering something that is of benefit to the plumbing and heating industry." A manufacturer in Buffalo writes, "I hope this second contest goes over in a big way." Still another manufacturer states, "Your FHA contest, in our opinion, is a big step in the right direction for the stimulation of business in our industry and we wish to take this opportunity to commend you on putting this campaign across. It is now and in the past it has always been our policy to market our products through the channels of the plumbing and heating contractor. We are confident that this source of distribution is well established to contact the owner and to ably hold their sales place in competition with the other various methods of marketing.

"A contest of this kind, however, will bring out tried and tested plans as well as new suggestions and ideas that cannot help but be an incentive for greater and more aggressive effort to obtain an even larger share of the consumer's dollar. We are wholeheartedly behind this campaign of yours and on our part we are giving every cooperation to our customers in the way of literature and sales helps to bring out clearly to the customer the advantages of financing heating alterations and replacements under the simplified and low carrying charges made possible due to the Federal Housing Act."

Space does not permit us to reproduce in this issue all of the messages and letterheads of those who are supporting this prize contest. Letterheads of the remaining contributors will be reproduced in May. Also, there will be further comments and practical FHA ideas.

Collection Methods for Today

One of the major problems facing contractor-dealers is that of collecting accounts quickly and effectively

We should like to see a few of these rolling our way from you
ON OUR BOOKS you have a small account. May we have your check today, please?
WE WONDER why our account remains unpaid.

WHATEVER past experience has been on the subject of collecting overdue accounts, practically all of the many plumbing and heating contractors interviewed recently, on effective money-getting methods, declare that form letters seem to have lost their spell at this time. The gloved appeal by post, couched in elegant English, rolls off the backs of old debtors like so much water off a duck's tail feathers. "You must go after them strong and in person," is the essence of present practice, say effective collectors.

Enigmatic as it sounds, the best time to prevent a long list of delinquents is never to accumulate such a list. This points to thorough previous investigation, instead of accepting orders from untried customers then wondering after contracts have been fulfilled why they don't pay promptly. Prior inquiry has come to be standard practice with most large-city plumbing and heating contractors such, for example, as Hubbard & Lange, Inc., Riggs-Distler & Co., J. N. Knight & Son, all of New York City. And this class of operator today is in good financial condition insofar as uncollected debts are concerned.

Jos. F. Heck, manager, plumbing department, Hubbard and Lange, to cite a single example, makes no secret of the fact that negotiations on almost all large contracts include bank guarantees, investigations of bill-paying histories and resort to credit agencies for information as soon as it appears that his company is likely to be favored with new business. Eugene Duklauer, another New York operator, praises the value of this method by revealing that in his 24 years' career as a plumbing and heating contractor there have been only two bad accounts and these yielded to legal procedure and eventually were paid.

It is true that the smaller the account the greater is the difficulty in collecting it, as a general rule. While this is contrary to expectation, it may come about from the fact that most delinquents know that contractors rarely go to law over amounts less than $15.00, hence take their own sweet time in meeting such bills. Granted that debtors cannot or do not chose to pay, they usually appear little concerned about overdue bills not amenable to suit.

The average American citizen likes a good name, nevertheless, and only seldom intentionally avoids paying his plumbing and heating contractor. And, it is on this class of delinquent debt, which also represents the great majority of outstanding accounts, that approved collection methods can and should be employed. What methods are effective?

Probably there is no procedure that enjoys more widespread popularity now than the personal visit. If open accounts are more than 30 days old, personal calls on debtors in most cases will result in some sort of payment. If accounts cannot be met in full, at least part of the total amounts due will be tendered.

W. R. Nygren, president, J. N. Knight & Son, calls attention to the fact that one must use considerable diplomacy in personal back-payment solicitations. Many of their customers, for instance, are millionaire residents

At the top of this page and on the next page are reproductions of stickers which contractor-dealers attach to their collection letters. Reports are that the use of these has been very effective

of Upper Fifth and Park Avenues and well able to pay. Frequently bills and statements, received by servants, fail to reach the attention of those who write the checks. Such customers are glad to have old bills called to their attention. In other cases owners are in Florida, Europe and distant resorts and bill paying, in consequence, is delayed. Such customers must be handled with kid gloves.

On the other hand, states Charles Bach, Hoboken, N. J., one of our old-line contractors of 45 years' experience, all debtors felt to be shaky, or who are new, are solicited at the end of 60 days and payment is requested in no uncertain terms. This contractor rightfully feels that delinquent debtors actually are borrowing without paying interest, that if the subject is put up to them fairly and squarely but without bullying or, on the other hand, pussy-footing, settlement of the account can be obtained. This is the plan followed here and has proved effective.

Other times, other customs, runs an ancient quotation, meaning here that present conditions often demand novel and exceptional types of appeal. The honored "Please remit," or the milder, "Please," have lost their power. The much-favored dunning letter of the past, that which may begin, "Dear Sir: May we call your attention to your overdue account of $34.75," etc. is just so much fodder for the hungry flames of the home furnace.

"The gloved appeal rolls off the backs of old debtors like so much water off a ducks tail feathers"

Yet, says Fred Robertson, of the Robertson Plumbing and Heating Co., Bayside, L. I., a clever rubber stamp or a few amusing stickers pasted onto statements may bring in the bacon, although he is partial to personally dictated and signed letters. One of the stickers found helpful is that which shows a smiling man punching the keys of a cash register, below which is: "Sweet music it will be, by heck, to read your words, 'Enclosed find check.'"

Another good sticker Robertson uses is one showing four upright coins equipped with legs and feet and marching in line, the message being, "We should like to see a few of these rolling our way from you." Although this contractor has a complete set of about a dozen different stickers five of the assortment are used mostly.

The Manhasset Plumbing and Heating Co., Manhasset, L. I., like their rubber stamps, imprints being placed on most accounts more than 30 days old. One shows a large question mark beneath which is: "Have you forgotten us?" When this appears on old statements the majority of delinquents enclose check with the statement and jot down, "No." Another stamp shows a Brownie poring over the ledger and, looking up with an expression of surprise, appears to say (according to the stamped message shown) "'Tain't Paid Yet!" E. Distler, partner, asserts that his company has little trouble with uncollectable accounts.

Perhaps most effective of all the methods encountered in plumbing and heating contractors' offices is that employed by J. Alfred Freeman, Jersey City, N. J. This comprises a self-addressed envelope with a message on the inner side of the flap and extending over the back of the envelope so that all printing is covered when the envelope is sealed. This reminder is not included with the first statement but goes out with all subsequent statements.

The dunning message states, "Our Inside Story," followed by: "Dear Mr. ———. One of our ideas about being in business is to be as helpful as we can to our customers. We even help them by sending them handy return envelopes like this one. Won't you slip your check into this envelope to balance your account and help us with our collections? Thank you."

Then below this is a regular ruled invoice, or statement, form wherein the amount of the balance due is shown and, again, down at the bottom a large "Thank you" in red, heavily over and underscored. These envelopes collect eight out of 10 overdue accounts, reveals Mr. Freeman. The remaining two who don't pay are visited personally after 60 days and are asked for their check.

There is nothing like persistence at this time, agree most plumbing and heating contractor-dealers surveyed. Although money needs continue unabated, incomes must be stretched. Folks pay those who ask the most often and the most firmly. Often the telephone, used as a frequent reminder, brings in the money. In both telephone and personal calls it is deemed essential that debtors be kept in good humor, for, if angered, they are

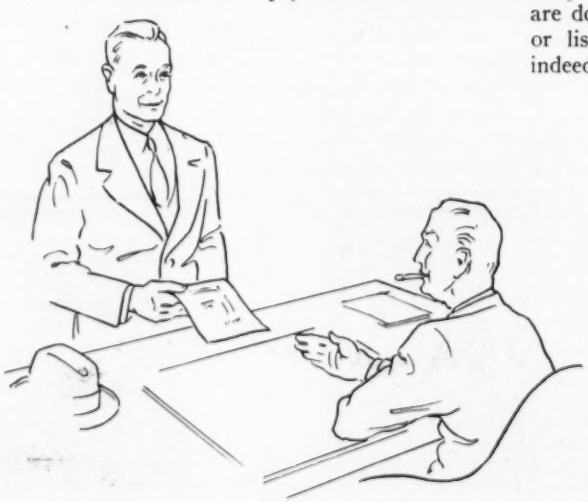
inclined to balk and usually make the collection duty doubly difficult.

Naturally, the intimacy of relations with debtors guides the trend of the conversation. If debtors are known well frequent kidding brings payment, otherwise firmness without being offensive is considered best. Surely, contractors need not apologize for asking for their money and too-gentle appeals are held to be worse than useless. Much the same applies to bill sending. As soon as work is completed invoices should be mailed, the same day, if possible. Otherwise debtors are likely to get the idea that contractors do not need the money and they can be put off until the debtor becomes a delinquent.

This brings us back to an idea expressed earlier which indicates that overdue accounts in amount and in number often may be charged to faulty selling methods. If prospective customers are felt to be shaky, why not investigate their records? If some are known to be honest but have scanty incomes it is generally agreed that a down-payment of 50 per of the contract should be made at the time of signing the order or as soon as work is done and the balance divided into not more than three monthly payments.

Generally speaking, if contracts are to exceed $100.00 and cover modernization, repairs and jobbing it is advisable to have customers sign time-payment contracts under the Federal Housing Administration plan, co-endorsed notes, or a contract wherein a commercial finance company handles the collections, paying the contractor the total amount of the contract, or nearly all of it, as soon as the work is completed. Many hold that the financial phase of any but small contracts is as important as any other aspect of an average job. If prospects are known to be shaky is it not preferable to decline to do the work except on a cash basis? Most contractors agree that it is.

To summarize the collection subject as it exists under present conditions, it might be said that orders under $10.00 in amount should be for cash only unless credit is known to be absolutely sound; jobs between $10.00 and $100.00 open account only for known good payers, otherwise for cash; jobs over $100.00 FHA, commercial finance company or other signed-contract plan, or down payment of 50 per cent of the total contract and the balance in signed and endorsed notes with interest; larger contracts signed agreements with provision for payments to be made as work progresses. If these things are done, the delinquent debtor list should be very small indeed.



The illustrations at the top of this page are reproductions of rubber stamps which one contractor-dealer finds effective

"'You must go after them strong and in person,' is the essence of present practice, say effective collectors"

Water supply systems in rural districts have a strong appeal where fire is concerned

Vacation Trade Is Outlet for Water Systems

Summer business adds to complete water sales program

HARRY D. BUNKER carries on a successful heating and plumbing business in North Conway, New Hampshire, and the surrounding territory. It is in the heart of the summer vacation region of the White Mountains and this fact has meant that the kind of business which is available and the manner in which it is done has some very interesting characteristics, which are not peculiar to this section of the country alone. In fact they are more or less typical of hundreds of communities throughout New England and other sections of the country where the recreation industry is an important economic asset.

In the first place the heating end of the business is a comparatively small part. Except for a very limited number of hotels and a few boarding houses the recreation business is at a standstill during the heating season. Practically all of the homes owned by people who spend their vacations in this part of the country are closed during the winter.

In telling how he is promoting his business in his locality, Mr. Bunker says he feels there are only three ways in which he can secure new business. One is to advertise in the local paper. This, like most papers of its kind, goes into practically every home within a radius of ten to fifteen miles, and it generally is read thoroughly from start to finish, a characteristic of the country town newspaper.

He went on to state that probably the best source of new clients is the large number of satisfied customers he has worked up. The things that they tell, about the quality of Mr. Bunker's work and the manner in which he serves his clientele, bring in more new people than anything else, he says. The important thing to realize in such possibilities, he explained, is to do good work, charge no more than is reasonable and, whenever servicing is necessary, to do it promptly. This of course is fundamental and no one knows it better than Bunker. As he says, "I always definitely try to do my jobs in such a manner that I feel sure they will not need servicing for a long time. This means, of course, that I cannot do a cheap job but by this time I have pretty well educated my public to understand that cheap work is always expensive in the long run."

The third way of getting new business employed by Harry Bunker is to make a personal call on any one he hears of as contemplating a new installation of some kind, or of a replacement of old equipment. He has found that in a territory like this, everything is on a decidedly personal basis.

The foregoing discussion of the means available for

securing new business applies to other lines in his field as well as to heating. This brings us to a discussion of his summer clientele.

These people are the cause of two rush seasons. One comes in May and June when they move into their homes and want their water supply turned on. The other rush season in between the first of September and the middle of October when the water must be turned off. Much of this work is mere routine, with once in a while some repairs or replacements of worn parts. However, this regular attention to the water supply and plumbing provides an excellent opportunity for keeping the whole installation in first class condition all of the time. As Mr. Bunker explained, "If we put the job in good shape every spring there is rarely anything to do that costs very much as far as the existing equipment is concerned. In this way we avoid the annoyance and expense to our customers of having some unexpected breakdown which compels him to call us in on an emergency, and perhaps make an expensive replacement. It is decidedly the most economical thing to do from the standpoint of the man who pays for it and we have the important benefit of having him satisfied and ready to put in a good word for us and to turn to us when additions and remodeling is planned.

Probably the most interesting work is done when some prospective summer resident purchases an old farm house and installs a water system. "We run into a great variety of conditions in this way. For example, we were called on to install a water supply system for a house on top of a hill. It was found that the well that formerly supplied the farm was contaminated and it was not likely that it would supply the needs of the new tenants anyway, especially during the dry season. To drill a well seemed too expensive. There was, however, an excellent spring in the woods slightly over 100 ft. lower and about 650 ft. away. This was undoubtedly the logical source of water supply but to raise it to such an elevation made it necessary to be careful to select the right machinery.

"It was decided to build a small pump house near the spring and place in it a pressure tank, pump and gasolene engine. There was no electricity running to the property. The equipment was placed as near the spring as possible to lessen the water lift and the various parts

(Continued on Page 72)

Calnan Urges M.W.C. Support

Warns against change in established distribution

IN an article on "Distribution" published some time ago, I pointed out the fact that the direct-to-you idea depends, insofar as the manufacturer is concerned, on the manufacturer-wholesaler-contractor system for its profit.

I said further that no manufacturer can exist on sales made exclusively to direct-to-you distributors. With three exceptions, all manufacturers in our industry who supply the direct-to-you distributors depend on the orthodox distributors for their major volume.

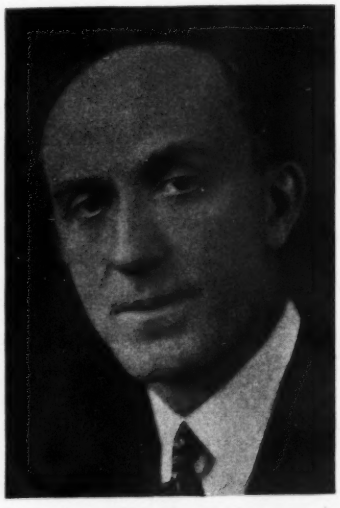
Under these circumstances, it is obvious that the contractor who is so shortsighted as to make any purchase of materials from a manufacturer who sells direct or from any direct-to-you distributor is cutting the ground from under his own feet.

A purchase of material from such a source has the effect of aiding our enemies and defeating our friends. The direct-to-you system of distribution can hold nothing in it for us except wages at day labor rates—and the lowest rates at that. It is impossible for a contractor to exist as an independent business man under the D.t.u. system.

In other words, every time we buy materials we are, figuratively speaking, casting a vote in an election—an election which will determine which system of distribution is to prevail.

In this election every ballot counts—every vote is important to the survival of the system of distribution for which the National Association of Master Plumbers stands.

Our friends—namely, those manufacturers who adhere to the system of distribution which we know is best for us as well as the public—are giving us the best possible ammunition in the fight for business volume.



John J. Calnan

They have given us prices comparable to those which the D.t.u. distributors are offering. These low prices come to us at an opportune time when the Better Housing Program of the Federal Housing Administration is creating a steadily increasing volume of sales.

(Continued on Page 100)

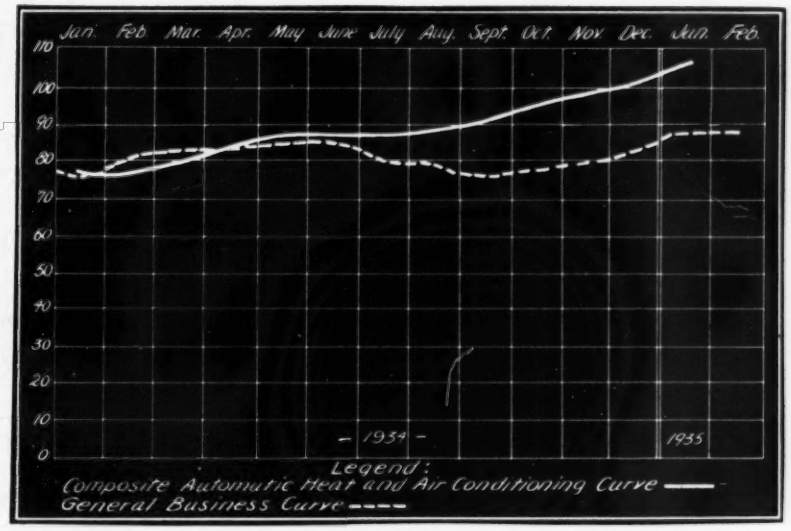


Fig. 1—Automatic heat and air conditioning business as a whole (see solid line) still leads business in general which is represented by dotted line

A. H. and A. C. Index* Is Up Twenty-eight Points

By The Marketing Staff OF
AUTOMATIC HEAT AND AIR CONDITIONING

AUTOMATIC HEAT and AIR CONDITIONING's composite curve is at 106 for January of 1935 as compared with 100 in December of 1934 and 78 in January of 1934.

Although shipments of all items in the field were better than would normally be expected in January, the increase can be attributed mainly to oil burners, air conditioning equipment and stokers.

Additional manufacturers now are reporting to the government on all these items. As a result, oil burner sales for 1934 have risen from the 98,846 units previously reported to 107,146 units; air conditioning sales from $13,014,078 to $14,277,656; and class 1, 2 and 3 stoker shipments from 21,253 units to 26,574 units.

OIL BURNER SHIPMENTS

Oil burner shipments are now reported by 160 manufacturers instead of the previous 149. Twenty-three of these are new manufacturers and twelve of those previously reporting have discontinued the line. The manufacturers whose data are included in these statistics produced approximately 88 per cent of the total value of output in the industry reported at the census of manufacturers for 1933.

The new totals for 1934 as compared with 1933 are as follows:

	1934	1933	% Increase 1934 Over 1933
Domestic—Mechanical Draft	79,336	71,335	....
Domestic—Natural Draft	6,844	7,229	....
Industrial—Mechanical Draft	9,091	8,405	....
Industrial—Natural Draft	2,787	2,697	....
Boiler Burner Units	8,382	....	....
Furnace Burner Units	706	....	....
Totals	107,146	89,666	19.4%

Shipments for January, 1935, compared with January, 1934, were as follows:

	1935	1934	% Increase 1935 Over 1934
Domestic—Mechanical Draft	3,138	2,200	42.6
Domestic—Natural Draft	191	215	*11.1

(Continued on Page 93)

*Note: This feature is designed to show our industry, at a glance, how business is progressing.

One Out of

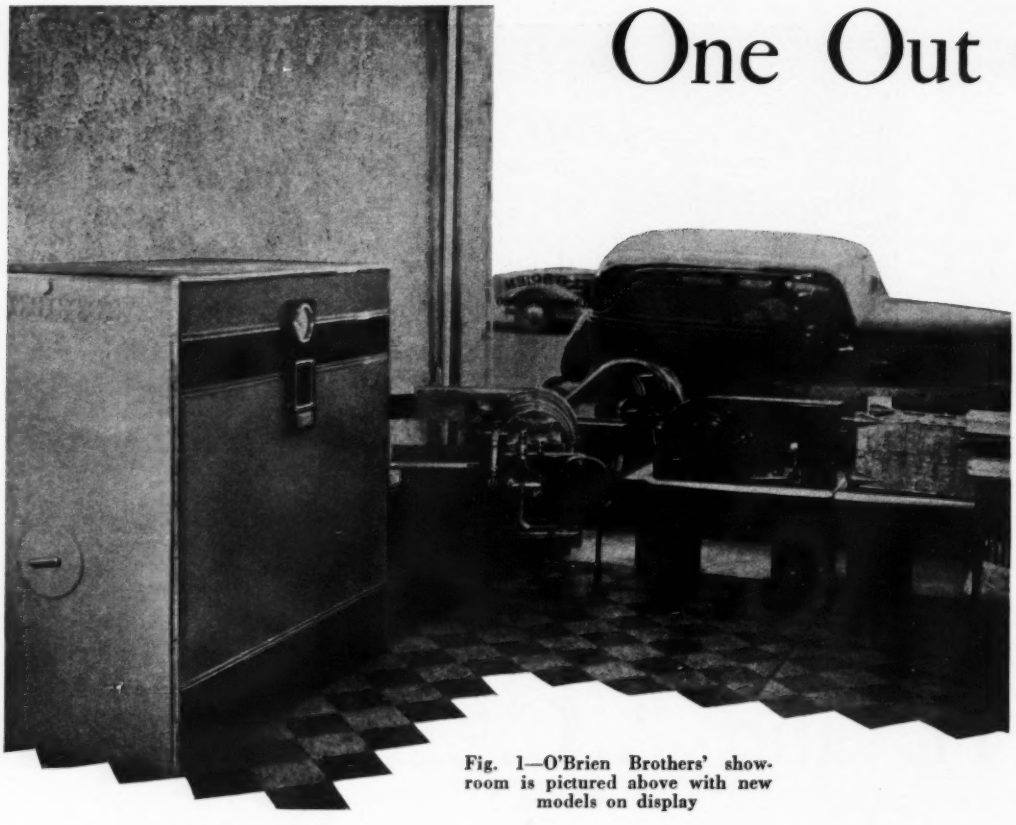


Fig. 1—O'Brien Brothers' showroom is pictured above with new models on display

THE fact that a building owner already has automatic heat necessarily need not mean that he is not a good prospect for a new conversion unit or an oil-fired boiler, declared David D. Lieberman, general manager, O'Brien Bros., Flushing, N. Y., in discussing sales. This dealer handles its outside selling solicitations on the basis that nearly every property owner is a likely prospect. That there is a rapidly developing replacement market is evidenced in the fact that about one in every 10 oil heating sales made during the past season by the O'Briens can be classed as a replacement.

It is unknown whether an accepted mortality of an average oil burner has been determined. Like anything else mechanical the better makes, naturally, last longer than those hastily assembled and offered as price-competitive apparatus. Manager Lieberman of the O'Brien company gives four years as the average age of burners thus far replaced by his company. He has found the average age of furnaces and boilers replaced with new oil-fired boiler units is slightly greater.

Automatic oil heating salesmen are too easily frightened away from those who may be good prospects simply because folk tell them they already have an oil burner, believes Mr. Lieberman. A little persistence in the discussion is likely to reveal that units owned are not above criticism and canvassers of high intelligence probably will be able to bring out the fact that many burners in service actually are all shot to pieces and just about ready for replacement.

This is held most likely to be true when existing burners are more than seven years old. The kaleidoscopic changes in manufacture and oil burner dealerships that have occurred during the past few years have brought about the condition that oil burner dealers who originally made the sale are no longer functioning. Replacement parts in such cases must be handmade or are unobtainable. In order to obtain service, in many instances, folks have to depend on the classified telephone directory and may be unfortunate enough to call in careless and unreliable servicemen. After owners have encountered such sad experiences a few times they are good prospects for new burners and especially for combination burner-boiler units, say O'Brien Bros. Some 35 sales of this sort were made by them during the current season.

The marked growth of oil heating replacement sales naturally opens the way for standardization of practice in disposing of old burners taken in trade, trade-in allowances, if any and old furnaces and boilers replaced. Just now the situation is felt to be a matter for each dealer to handle in his own particular way. In O'Brien Bros.' case, old burners are dismantled, any repair parts of value being salvaged for possible service calls. Very old boilers in poor condition are sold to the junk people

Fig. 2—Here is one type of outlet for oil burners which this dealer has tapped. It goes to strengthen his story that the owner with automatic heat should not be eliminated as a prospect for new equipment

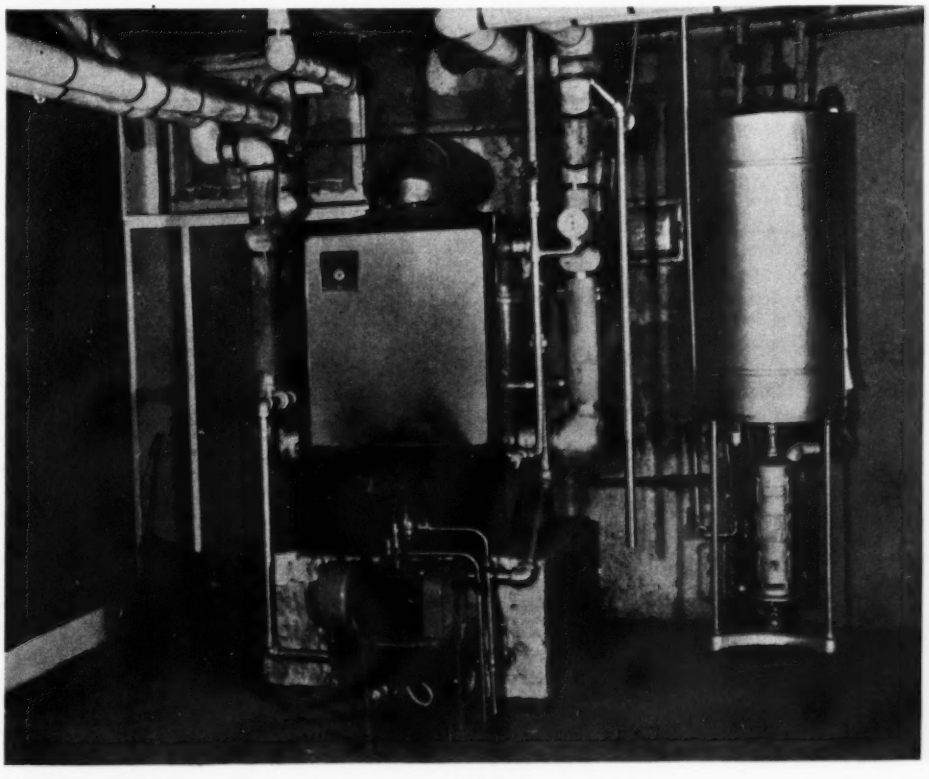
Every Ten Oil Burner Sales Is Classed as a Replacement

This dealer has found that because an owner has an oil burner is no reason to cross him off his prospect list. He sells him a new burner or a boiler burner unit

while furnaces and boilers in good condition are resold for use where it is impossible to sell new equipment.

Ability to take into stock old equipment and use or resell it to advantage has encouraged the O'Briens to go after the replacement market more actively than if substitutions had to be made with loss in profit on new equipment. It is true, states Manager Lieberman, that sometimes supposedly sharp traders haggle over trade-in allowances. If prospects are known to be out shopping, juggling one dealer against another over the matter of trade-in allowances, then the O'Brien Bros. simply add a little onto the total prices asked, thus usually being able to satisfy this class of customer without loss to themselves.

It is a fine thing to own an oil burner no matter what its condition, declares Jas. J. O'Brien, president of O'Brien Bros. and a director of the National Oil Burners Dealers Association. He stresses the point that ownership of a burner demonstrates the virtues of automatic oil heating when the equipment is right and those who once are owners seldom leave the ranks. Yet, if canvassers should pass up all property owners simply be-



cause they already have units deficiencies of wornout equipment may so distress owners that they decide to discard oil heating altogether. It's better to keep on inquiring so that first-aid can be administered to ailing machines and so that homeowners thus may be satisfied with oil as a heating method.

This introduces the fact that it is as important to cultivate existing owners with a view to future business as it is to hasten on to others who have yet to become acquainted with oil. If owners are not now in the market for replacement equipment they will be sooner or later and if they know O'Brien Bros. favorably their call is as likely to be received by this contractor-dealer as by the dealer who made the previous sale. The fact that O'Brien Bros. have been licensed plumbing and heating contractors for two generations has earned them a wide acquaintance and a good reputation on Long Island.

PRICE COMPETITION NO PROBLEM HERE

Price competition, a problem to many quality dealers at present, has not concerned the Flushing men much because they realize that there are always plenty of prospects for high grade oil equipment, just as there are always prospects for costly automobiles and other top-rank mechanical things. Improved business conditions should enlarge the prospect list, yet lack of potential buyers never has been a problem here. Unlike some dealers, the O'Briens have never made agency connections on cheap burners and boiler units to meet price competition. Experience has taught the sales force how to overcome price competition.

One of the favorite ways is by reciting a long list of owners who have traded in their price-competitive burners after a few years' use and purchased those handled by O'Brien Bros. Another way to quash price competition is to take prospects to the basements of satisfied customers. Wherever possible exhibit installations are those that include summer-winter automatic hot water, low-water cut-offs and other special features that suggest refinements.

Fig. 3—Below is a view of an O'Brien Brothers replacement installation in a round boiler. Note that automatic heat has made possible a recreation room in the basement

As athletic teams play best on their home grounds and frequently lose on unfriendly grounds, so possible purchasers are found to offer greater sales resistance in their own homes than away from them. Capitalizing on this psychological advantage, this dealer's display room is carefully outfitted with good furniture, catalog matter, still and active models of burners and burner-boiler units.

Another point to be observed about taking prospects around to "friendly basements" is that of making such trips as short as possible to avoid tiring them. Hence, the O'Briens have lined up exhibition installations in about every corner of their territory. This has required cultivation and a few free service visits to gain good will. Small as the loss has been in such work, the good will engendered is held to be amply repaid.

In general, canvassing salesmen who encounter burner owners find it advantageous to ask questions so as to develop information for office file. And in such inquiries points of dissatisfaction with units owned usually develop. It is a hard and fixed policy of the company, however, that no competitive make of burner shall be criticized. Knocking surely is not a good way to make new sales. Thus inquiries demand a certain amount of diplomacy.

WHAT CANVASSERS ASK IN CALLS

The men ask about the make, the size, the style, length of service and, lastly, condition. If owners state that everything is entirely satisfactory slight sales opportunity is deemed to exist except in offering boiler-burner units in place of conversions.

Yet, questions about accurate functioning of controls, quantity of fuel consumed, adequacy of radiation, whether or not there are low-water cut-offs and year 'round automatic hot water provisions, ability of users to secure good repair service and like inquiries bring to light the foundations for future sales by the O'Briens for replacement or improvement equipment. The desired information does not always come easily and it is by fishing around in a courteous, diplomatic way, that the facts are fully revealed. This suggests the truism of all good salesmanship, stated Mr. O'Brien, that it is best to talk with, rather than at, prospects.

Prospects if harangued and lectured to are likely to

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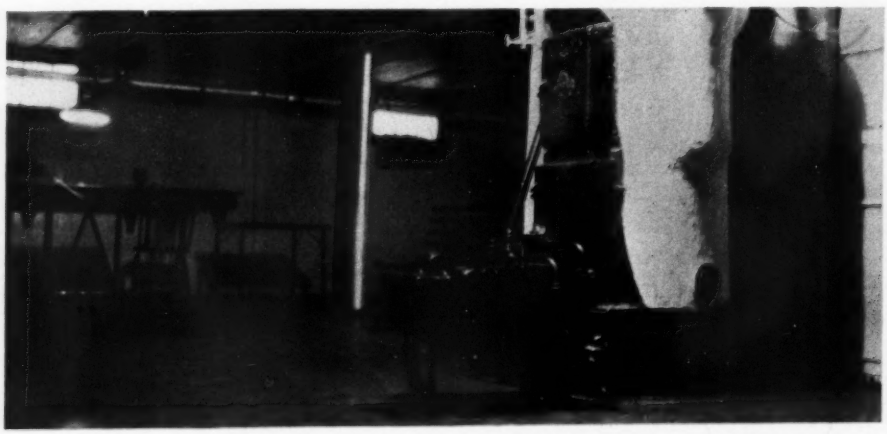


Combustion—How to Build Chambers on Oil Jobs

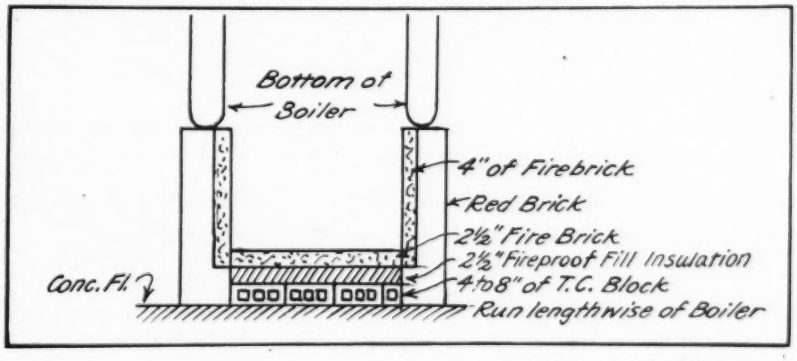


Fig. 1—Where the setting is depressed, it is necessary to turn one block on its end upward so as to permit the air to circulate

This very important subject merits the close attention and study of all connected with the installation of oil burners

"WHAT kind of an oil burner shall I use and how should it be set" are thoughts which enter the mind of every heating contractor-dealer at some time or other and the answer is one which gives concern even to experts not all of whom are unanimous in their answers. For this reason it is not surprising that the contractor-dealer oftentimes is puzzled. And yet there are some basic factors which, if never forgotten during

To the Editor:

We have noticed that you use the words combustion chamber, and combustion space interchangeably. We consider the combustion chamber to be that space within the refractory fire box. The combustion space in any boiler is not susceptible to much change, but the combustion chamber which is built by our installation men to suit the conditions observed can be greatly varied.

Hartford, Conn. S. A. S.

To the Reader:

The terms combustion space and combustion chamber assume more or less a similar meaning when applied to oil burners as the combustion chamber is literally the chamber in which combustion takes place and the chamber may be formed partially by the oil burner setting, the boiler setting and the boiler itself. The space included within this composite chamber is the combustion space.

We believe that a good definition of combustion space is the space in which combustion takes place, before the gases enter the flue passages of the boiler, while the portion of the combustion space included within what is termed the combustion chamber is simply a part of the oil burner setting. In other words, we feel that your interpretation of combustion chamber is correct as far as it goes but that it does not include the entire combustion chamber which consists of the enclosure around the combustion space. If, on the other hand, you termed this the oil burner setting we believe there would be no question in anyone's mind as to just what you referred to whereas by the use of combustion chamber you open yourself to the idea that the entire chamber is referred to.

This seems to be borne out by the use of the term boiler setting which includes the steel supports and the bricking in of the boiler but does not include the foundations. Similarly with a stoker, the stoker setting is the brickwork enclosing the stoker but does not include the stoker foundations; a similar application to oil burners would indicate that the oil burner setting would include the brickwork enclosing the oil burner. This seems to be what you are terming the combustion chamber and we think that the term oil burner setting is a better definition of this portion of the brickwork being less subject to misinterpretation.

an oil burner installation, may save many a headache and dent in the finances. In fact, they may be the items whose neglect will turn the job from one in the black to one in the red to say nothing of the damage done to the contractor's reputation. There is a great deal of the truth in the saying that one flop requires 100 successful jobs to offset it and possibly the 100 is altogether too low.

The facts in the following discussion have been worked up in consultation with one of the largest manufacturers of oil burning equipment on the market and while, perhaps, particularly applicable to their own equipment, an effort has been made to present information of such a nature as will apply to oil burner equipment in general and which will be of assistance to a contractor who has an oil burner to install whatever its make or nature.

In the first place, what is the oil burner setting? Possibly a good definition of this is that the oil burner setting is all of the masonry work and metal work installed under, or within, the boiler to accommodate the use of oil and which would not be required if a solid fuel were used. This would include all of the brickwork, decking, plates, and other material to prepare the space under and within the boiler for the reception of the type of burner selected. And this opens up another question of what is the "deck"? Ordinarily this term is taken to cover the flat surface installed under a cup burner or any flat surface which may result in the effort to make the setting conform closely to the shape of the flame by carrying the masonry work around the outside edge of the flame and in close proximity thereto.

Combustion space is another thing which sometimes is confused with the term combustion chamber. Actually the two are synonymous in meaning but trade usage sometimes considers the *combustion chamber* as only the space included within the oil burner setting while *combustion space* is all of the space in which combustion takes place exclusive of the boiler flues and space below the deck on a cup burner. Actually there is no more reason to make this distinction in oil burners than there is in the setting of a stoker and throughout this discussion combustion space and combustion chamber will be considered as all of the space in which combustion takes place before the gases enter the flues.

The general rule for the amount of combustion space required is from 1½ to 2 lb. of oil per cubic foot of combustion space or a minimum of 3 cu. ft. of combustion space per gallon of oil. A very interesting chart for combustion space required was presented in the January issue from which direct readings may be obtained for any number of lb., of oil per hour, the chart showing both maximum and minimum requirements.

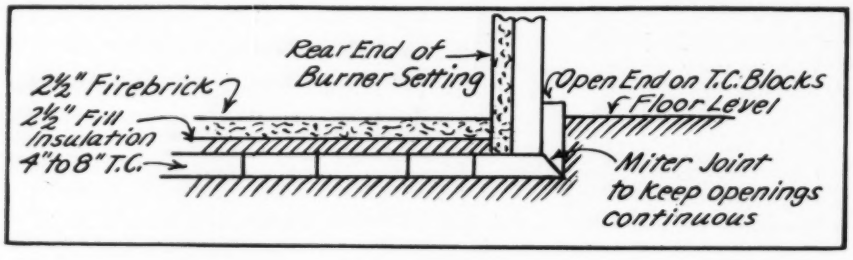

Rear End of Burner Setting
2½" Firebrick
2½" Fill Insulation
4" to 8" T.C.
Open End on T.C. Blocks ¢ Floor Level
Miter Joint to keep openings continuous

Fig. 2—Here is a cross section elevation which indicates a method of constructing an oil burner setting

On numerous occasions, it has been demonstrated that otherwise excellent oil burner jobs have been made ineffective because of some oversight or lack of attention to installation details. Too much stress cannot be laid on the importance of correctly designing those features which are

One of the most prolific causes of trouble with oil burners is not the burners themselves but the fact that they often are installed on boilers which are inadequate in size for the load to be carried or the boilers are connected to chimneys of insufficient area so that proper results cannot be obtained no matter what fuel might be used with the possible exception of gas. The first thing in every boiler installation is to see that the boiler has sufficient capacity to carry the actual radiator load plus 25 per cent for piping plus another 25 per cent for morning pickup, if the building is not heated 24 hours per day. It must not be forgotten that any water heating done by the boiler increases the load on the boiler, regardless of statements to the contrary, and should be added to the radiator load on the basis of 3½ sq. ft. of steam radiation for every gallon per hour of water heated.

The chimney flue for the boiler should be at least of the size and height recommended by the boiler manu-

facturer and while excessive draft may be throttled down easily, insufficient draft is a thing very hard to rectify. Although the height of the chimney may be reduced considerably, on a boiler with an oil burner, under that which would be required for the same boiler using coal, the fact remains that there is a certain height which still is required in order to remove the products of combustion and that this height must be attained if the best results are to be expected.

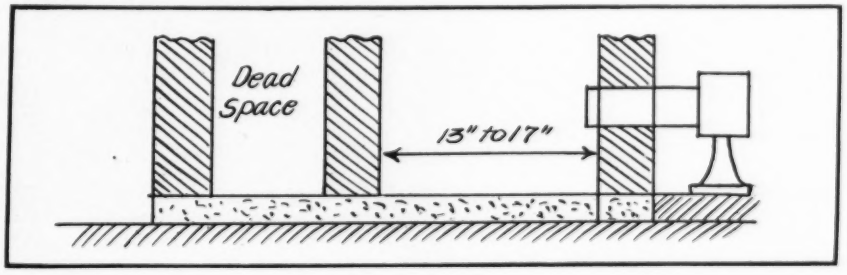
Oil burner settings must be considered on the basis of having to withstand high temperatures, the temperature in the chamber around the flame often reaching 1,700 to 2,500 deg. Fahr. The effect of these temperatures on the flooring below must not be lost sight of. Ordinarily a 2½ in. layer of special blocks laid flat is recommended under the fire brick forming the bottom of the setting. When water proofing exists under the floor it is advisable to put a row of hollow tile 4 in. to 8 in. in thickness under the blocks so as to provide continuous air cooled spaces under the setting and between the waterproofing and the bottom of the setting. Where the setting is depressed it is necessary to turn one block on its end upward so as to permit the air to circulate. See Figs. 1 and 2.

The fire brick used in all cases should be No. 1 brick and cheaper brick is poor economy in the long run. This brick should be backed up with a good quality of hard burned red brick where the thickness of the wall exceeds 8 in. The fire brick should be laid up the same as in any good boiler setting, namely by dipping it in a thin fire clay cement. Also, it should be laid as closely together as possible with practically no thickness to the joint. The mortar used on the red brick should be cement mortar tempered with lime to prevent the cement mortar cracking with the high temperatures. All interior metallic surfaces of the boiler whether water cooled or not should be protected for a distance of approximately 12 in. above the level of the flame by at least one thickness of fire brick.

In shape, the setting should approximate the outline of the flame as nearly as it can be predicted. Owing to no two flames ever being exactly alike it is well not to overdo this as a little space between the flame and the enclosing wall is not half as objectionable as a wall where the oil is impinging on the surface and building up carbon. Therefore, while the wall following the flame outline is theoretically desirable it is not often possible to attain this in practice due to changing shapes of flame from different draft conditions, different boilers, and other important and comparable factors.

subject to the peculiarities and variances in individual jobs. And, in this general subject, the matter of building the combustion chamber is of prime importance. The recommendations in this article are built up from methods which generally are followed now in practice

Fig. 3—Where the flame travel is short, it may be desirable to install a stop wall so as to bring an incandescent surface close to the flame. This is illustrated in section shown below



Where the flame travel is short, it may be desirable to install a stop wall so as to bring an incandescent surface close to the end of the flame and to correspond with the distance between the flame and side walls. An example of this is shown in a set-up made for a gun type burner applied to a cast iron boiler of standard type where an entirely separate wall is built from 13 in., to 17 in. back of the front of the boiler to accomplish this effect. See Fig. 3.

A good method of ascertaining whether the side and end walls are equidistant from the flame is to turn off the burner after a long period of operation and to note if the walls are all equally incandescent. Darker spots indicate where the wall is too far away from the flame and black spots show flame impingement and should be cut back further.

Provision for secondary air is no longer considered as essential as it used to be and most burners today are expected to operate with this adjunct. This is a considerable boon in a way as it simplifies the building and the installation of the oil burner setting to a considerable extent.

Radio Studios

Fig. 1—The view above shows one of the large studios. The observer's window is at the far end of the room and the control man's window is to the left. Conditioned air enters through the mushroom outlets in the ceiling

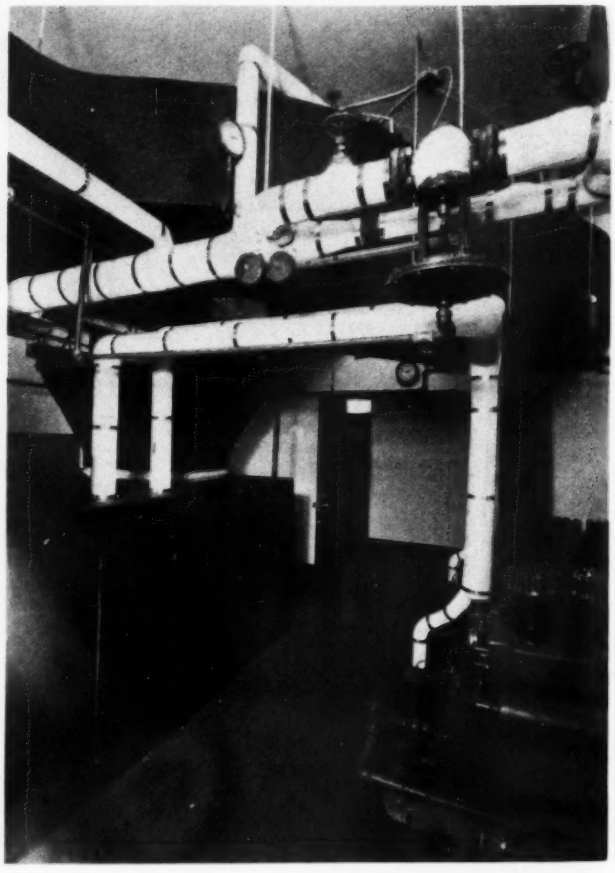


Fig. 2—A view of the machinery room shows the two refrigerating compressors in the right of the picture while the ductwork is above and at the left. Note that the piping is covered

RADIO stations, in their equipment, and radio programs form just one more agency which is making the general public conscious of air conditioning and the benefits to be derived from it. As an example, there is the KDKA radio station in Pittsburgh.

On November 2, 1934, this pioneer broadcasting station celebrated its 14th anniversary and on the same evening held the formal opening of its new studios. The entire third floor of the Grant Building has been remodeled extensively to accommodate the group of modern studios and the suite of offices. All evening the studios were crowded to capacity, yet the air in these tightly closed rooms remained fresh and comfortable because of the air conditioning system.

The double doors and the heavily insulated walls and ceilings make these studios ideal from the standpoint of keeping out noise and vibration, but at the same time they keep in the heat and demand air conditioning if comfort for the occupants is to be preserved.

Fig. 5 shows a floor plan of the studio and office layout. The entire central group of studios, control rooms, and observation rooms are air conditioned from one large plant located in a room in the corner of the building. Heavy ducts run through the corridors and carry the conditioned air to each room to be supplied. Another group of ducts returns a portion of the air to the plant to be reconditioned and recirculated. One-third of all the air circulated is drawn from outdoors.

The fan circulates a total of 7200 c.f.m. into three distinct duct distribution systems, each of which supplies one of the large studios and a group of smaller associated rooms. In Studios A and B, conditioned air is introduced through mushroom outlets in the ceiling. These are shown clearly in Fig. 1, which illustrates the interior of Studio A. In the smaller rooms the air is introduced through grilles near the ceiling. All of the return air grilles are near the floor.

In a group of studios like this it is important that

Help to Make Buying Public Air Conditioning Conscious

In addition to featuring programs on air conditioning, over the air, the conditioned studios impress their visitors

no sound be transmitted from one room to another. Observers look through double glass windows and see the performance but they hear only what comes to them from the loud speaker. The control man also watches but hears nothing directly. Sound proof walls, doors, and windows are used and the duct system must also be sound proof, otherwise all of the other precautions are useless.

In each duct leading to and leading from a room, there is a bank of sound absorbing tubes. The tubes are about 8 in. by 8 in. and 18 ft. long, made of wire mesh bent to form the desired shape and wrapped outside with a special insulating blanket. Enough of these tubes are placed side by side to provide the requisite area for the passage of the air. Very effectively they permit air to flow but absorb all noise.

(Continued on page 88)

Fig. 3—Above is the observers room. The double glass which separates it from the studio is very clearly apparent

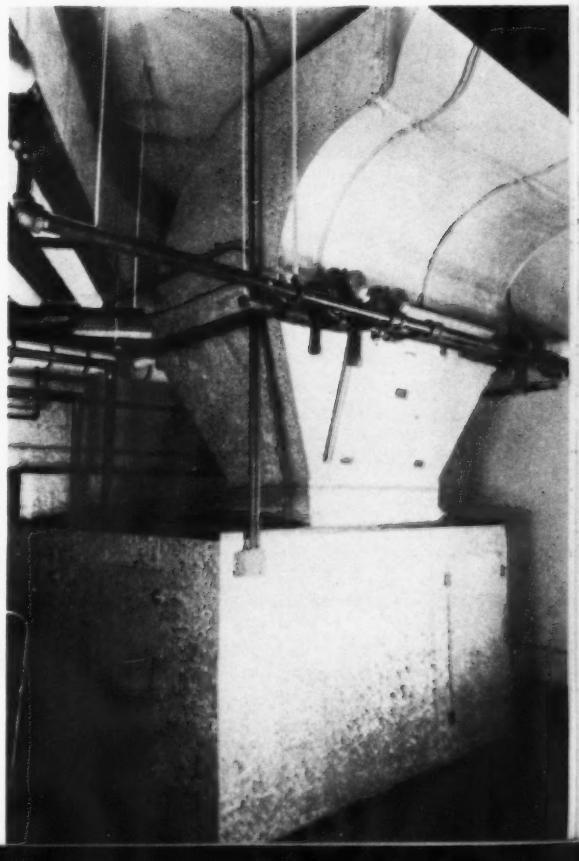


Fig. 4—The picture at the right shows the housing which contains the filters, cooling coils and fan. The fan outlet is in the foreground

Automatic Heat Prospects Found at FHA Exhibit

Birmingham dealer closes more than half a dozen sales

ACTIVE outside solicitation is necessary in order to tap the rapidly developing market for automatic heat with stokers. That is the experience of the Geo. F. Wheelock Co., Birmingham, Ala., which sold 75 stokers, mostly of the household type, last heating season. This was regarded as only the beginning.

This concern has four outside salesmen and it backs them up in every reasonable way, by weekly newspaper

Fig. 1—Above is exterior view of residence which contains the automatic heating installation shown at the right. The Wheelock Company, who did this job points out that their first object in going to a prospect is to get permission to make a survey of his heating needs

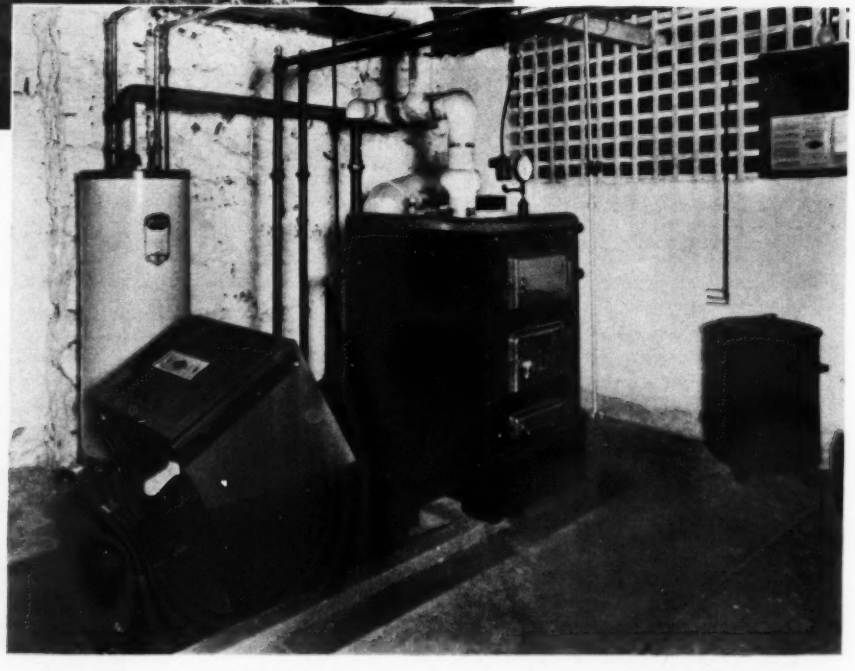


Fig. 2—In the illustration at the right, it will be noted that the automatic heating equipment is pitted below the boiler

Fig. 3—View of automatic heating display held in Birmingham as a part of the national campaign of the FHA. Several sales were made from the floor

A report tells us that automatic heating equipment for coal firing was a feature at the recent housing exhibit in Birmingham, in cooperation with the program sponsored by the Federal Housing Administration. Four local concerns, actively engaged in a sales campaign for stokers were on hand with displays from which they obtained numerous prospects and subsequent sales.

The report points out further that the campaign for the domestic stoker business in Birmingham was not launched until about two years ago and then only one concern was active for several months. Last season, a number of others got into the business and now automatic heat by means of stokers is becoming popular there. Estimates are that more than two hundred coal stokers have been installed within the past year.

advertising, by distribution of manufacturer's advertising, by displays at home shows, state fairs, etc., and above all by offering testimonials from satisfied local users. Photographs of Birmingham installations also are made available to show prospects.

Contact is being established this season with every owner of a home, apartment or place of business who is deemed financially able to buy. The latter qualification naturally limits solicitation so far as home owners go to the best type residential sections.

Only two years ago did anybody try to sell coal stokers in the city and then only one concern. Now more than a half dozen different makes of coal stokers are being actively merchandised and being made increasingly popular.

"A few dealers made the mistake at first of thinking coal stokers would sell if merely displayed on the showroom floor," said R. E. L. Shaw, sales manager of the Wheelock Company. "This was a mistake as even an automobile will not sell itself. The dealer who merely 'keeps' a showroom loses business to the more aggressive fellow. Thousands of persons need stokers, it is

true, but they don't know it yet. It takes outside solicitation to convince them that a hand-fired furnace is as much out of date as a hand-cranked automobile.

"Our first object in going to a prospect is to get his permission to make a free survey of his heating needs. If he is interested enough to authorize the survey we figure he is a good prospect. This survey enables us to learn more about the man's heating system than he knows himself, that is, the type and capacity of boiler in use, the amount of radiation and the construction of the house as relates to air infiltration and heat losses.

"From this data we make up a proposition showing what we propose to save the prospect in fuel cost compared with his coal bill for the past season. Usually we prefer to go to the man's office and go over this data with him, section by section, so that we can answer any questions that may arise as well as gauge his attitude toward a purchase. Of course he wants to know the cost of the installation but we try to keep this in the background, perferring rather to dwell on the saving in fuel bill.

"If the customer is then ready to sign on the dotted line we of course always have the trusty fountain pen at finger's reach. But it should be emphasized that the usual prospect does not buy on the first or the second visit. Several calls are required and this calls for persistence of the solicitor.

ARGUMENTS OTHER THAN FUEL SAVING USED

"Of course we are using other arguments than the savings in fuel bills in order to sell stokers. Undeniably there is the matter of convenience, the busy housewife or the tired business man merely having to adjust a thermostat instead of having to go down into the basement and feed a boiler. In Birmingham we are able to bear down on the point that residents should be willing to support a home industry, nearly 50,000 persons being employed in the Birmingham district in the mining, sale and handling of coal.

"At the recent housing exhibit in Birmingham as promoted all over the country by the FHA we maintained a display attended at all times by two salesmen. We kept a stoker in operation and also had a glass covered unit on display so that visitors might see the inside working parts. Ours was the only stoker exhibit attended throughout show hours. We obtained the names of more than 50 real prospects to whom we have already made more than a half dozen sales.

backs, Redmayne and Worthington; House, Cole and Milburn.
for
TIRED HUSBANDS
Just when you settle down, Mary says: "John, hadn't you better look at the furnace." Sh! Don't do that this winter.
Stay in your easy chair. STOKOL has charge of everything downstairs. Just adjust the thermostat there by your chair. He'll do the work; you REST!
STOKOL
Automatic COAL Stoker
The amazing thing about STOKOL is that he actually uses LESS coal than you do with all your pains and your handfiring. Two hundred husbands can't be wrong! Let us tell you what they say about the low cost and the saving!
GEO. F. WHEELOCK CO.
3013 2nd Ave., S.

Fig. 4—Here is one of the typical newspaper advertisements used by the Wheelock Company in their selling campaign

"Two of our stoker owners were interested enough to be present many hours at the exhibit and willingly gave testimony as to their satisfaction with automatic heat. The satisfied user sohuld never be overlooked as a fertile source of other prospects. He can nearly always be counted on to have at least two friends who are interested in coal stokers. We remember very well two years ago that it took us three months to sell our first stoker in Birmingham. The purchaser was an engineer and the next two to buy were his friends who bought almost solely on his recommendation.

ASSIST THE CUSTOMER WITH FHA LOANS

"We are, of course, glad to extend credit to those with established ratings as good risks. In most cases we have carried our own paper with the aid of the manufacturer but we are also glad to assist the customer with an FHA loan if he desires."

The Wheelock Company has installations supervised by a graduate heating engineer, with due regard for the various factors involved such as design and type of boiler employed, variation in load demand and its relation to capacity. Proper flame clearance for example is regarded as highly essential even if a pit installation for the stoker unit is found necessary. Most of the troubles, the company finds, can be traced to improper installations.

As another factor, the Wheelock Company impresses the point upon customers that it has been in business since 1888 and expects to continue at the old stand. This is important since customers want to be assured that they can obtain continued service for the stoker equipment. Often as not they merely want to call and discuss some matter which can be explained to their entire satisfaction. But it is natural that a customer hesitates to buy from some dealer who is likely to be out of business next year.

How to Design A. C. Jobs with Recirculation

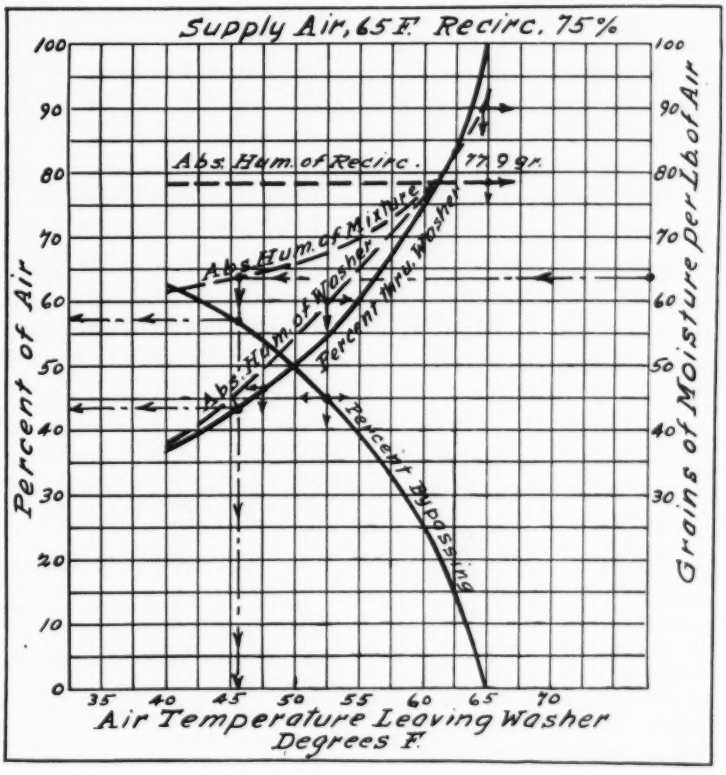


Fig. 1—These curves show the relation between the temperature of the air from the washer and per cent by-passed and the absolute humidity of the moisture based on a 65 deg. Fahr. air supply to the room

This article continues Mr. Alt's series on practical air conditioning and includes another useful example

ARTICLE NO. 12

IT already has been shown in earlier articles of this series, how the temperature at which air must be dehumidified is lower than that at which it is desirable for the air to enter the room and how some means of raising the air temperature must be provided. The actual use of steam in the reheater for this purpose seldom is indulged in, owing to the expense, and also to the fact that in some cases steam is not available in the summer without keeping a special fire going for this sole purpose. The second and more usual method of supplying the necessary heat to the air delivered by the dehumidifier is that employing recirculated air and for this purpose it is necessary first to consider recirculation and the properties of the recirculated air.

Recirculation is done largely on the basis of economy in operation and has resulted in overturning some of the old and what were supposed to be solid ventilating theories. Formerly it was presumed that ventilation consisted in producing air conditions inside of a building as nearly like the outside as possible (with the exception of the temperature perhaps) and that in order to do this it was necessary to inject the greatest possible amount of outside air; the greater this amount, it was thought, the better the ventilation. It also was thought that, after

the air had been breathed, it was seriously contaminated and must be removed from the building with as much dispatch as possible before anyone else could breathe the same air with unknown dire results.

With the advent of cooling it was at once noticeable that air from the room was a good deal nearer the desired condition of the supply air than was the outside air. It had already been cleaned, cooled and dehumidified and, while it had picked up some 10 degrees to 15 degrees in temperature in passing through the room, and a few grains of moisture perhaps, it still required a whole lot less work to be done on it than was necessary when raw air was taken from the outside. So experiments were made to find out how far this air could be reused in the system with the accompanying reduction in cost on the treatment end.

THE EMPLOYMENT OF RECIRCULATION

Recirculation has been found practical up to about 75 per cent of the total amount of air used; if more than this percentage is recirculated odors begin to build up unless ionizers are used in which case it is claimed that 90 per cent recirculation satisfactorily can be employed. Along this line, the minimum ventilation requirements recently set up by the A.S.H.V.E. prescribe not less than 10 cu. ft. per minute of outside air per person and it is well to keep on the safe side of this.

Recirculated air, coming back from the room or building conditioned, partakes of all of the conditions in the room or building which are presumed to be ideal (or as near ideal) as it is possible to make them. Thus, in a room at 80 deg. Fahr. and 50 per cent relative humidity, the recirculation air also will be at 80 deg. Fahr. and 50 per cent relative humidity which is a whole lot better than the 95 deg. Fahr. assumed outside under the same interior conditions. Also the air from the room will not exceed 77.9 grains of moisture per pound which will be less than the absolute humidity of the outside air if dehumidifying is being done, provided it is not unusually dry outside.

It has been seen that there is an economy in employing as large a proportion of recirculated air as possible; for the purpose of this discussion the amount of recirculation will be assumed as not to exceed 75 per cent as a safe limit to avoid odor difficulty. Now if all of this 75 per cent of recirculated air is brought back and is put through the air washer along with the 25 per cent of outside air, then all—or 100 per cent—of the supply air passes through the washer and emerges from the washer at the dehumidifying temperature, which usually is in the neighborhood of 50 deg. Fahr. Therefore, with such procedure, all—or 100 per cent—of the air must be reheated to the temperature at which it enters the room. If, on the other hand, all of the recirculated air is not put through the washer, then all of the air is not cooled to the dehumidifying temperature and the balance not passing through the washer may be used for reheating the cooled washer air.

Assume, for argument, that ⅓ of the *recirculated* air (⅓ of 75 per cent recirculated air equals 25 per cent of the total air) passes through the air washer and that ⅔ (⅔ of the 75 per cent recirculated air equals 50 per cent of the total air) is by-passed around the washer, as this process is termed. Then there is passing through the washer 25 per cent of the total air from a recirculation source and 25 per cent of the total air from an outside source making 50 per cent of the total air passing through the washer and being cooled and dehumidified. If the washer temperature is around 50 deg. Fahr. then, at the delivery end of the washer, 50 per cent of the total air is delivered at 50 deg. Fahr. and, if mixed with the balance of the recirculated air at 80 deg. Fahr. (which is the other 50 per cent of the total and at room temperature), the resultant mixture has a temperature of

50 deg. Fahr. × 50 per cent or 25 deg. Fahr.
80 deg. Fahr. × 50 per cent or 40 deg. Fahr.

65 deg. Fahr. temperature of mixture

and this is exactly the temperature desired.

But, says, the reader, the 50 per cent of recirculated air which has been caused to by-pass the washer has been neither cooled nor dehumidified. This is quite true and means that, if the washer at 50 deg. Fahr. were delivering exactly the correct amount of absolute humidity required in the air going to the room, the absolute humidity of the mixture going to the room would be somewhat higher that it should be. This is overcome, however, by slightly lowering the temperature at which dehumidifying is done until the air passing through the washer is OVER dehumidified to an extent necessary to balance for the by-passed air which is UNDER dehumidified.

CHECKING THE ABSOLUTE HUMIDITY

The absolute humidity very easily can be checked by finding the absolute humidity of the mixture a method which already has been explained in a previous chapter, and which gives the following:

The number of grains per pound in the air going to the room in the previous discussion* where the dehumidifying temperature was found to be 52 deg. Fahr. to 53 deg. Fahr. was 67.4 grains. The air now leaving the air washer at 50 deg. Fahr. and saturated will have 53.50 grains per pound (see Table 1) and the recirculated air coming back from the room will have 77.9 grains per pound (50 per cent relative humidity at 80 deg. Fahr.) so that the mixture will have

50 per cent × 53.50 grs. or 26.75 grs. for washer air
50 per cent × 77.9 grs. or 38.9 grs. for recirc. air

Mixture will have 65.65 grs. per lb.,

or a trifle less than the absolute humidity of 67.4 grains required. This indicates that a leaving temperature of 51 deg. Fahr. from the washer would be about correct for this condition.

In the by-passing of the air washer, some confusion seems to exist in the minds of many air conditioning engineers. This is caused, no doubt, by the effort to adjust two varying conditions so that both will hit on the right spot when the temperature used in the washer is not yet known. If the temperature required for the supply air is known, the other factors may be developed in a more or less simple manner by a few calculations of the conditions that will occur with different leaving temperatures for the washer and from such calculations it readily

(Continued on Page 145)

*See "How Humidity Control Is Accomplished" in Chapter 11. Published in March, 1935, issue.

14—
Problems in Wet Bulb

Problem—

If the dry bulb reads 70 deg. Fahr. and the wet bulb 65 deg. Fahr., in a room, what is the relative humidity?

Solution—

On chart No. 13 the wet bulb line for 65 deg. Fahr. intersects the 70 deg. Fahr. dry bulb line at 80 per cent R. H.

Problem—

How much depression of W. B. must be shown in a room at 80 deg. Fahr. if the R. H. is 50 per cent?

Solution—

On chart No. 13 the W. B. line at the intersection of 80 deg. Fahr. D. B., and 50 per cent R. H., is 67 deg. Fahr. W. B. The depression, therefore, is 80 deg. Fahr. minus 67 deg. Fahr. or 13 degrees.

Problem—

Cold air at zero and 50 per cent R. H., is heated to 70 deg. Fahr. in a room; what is the room R. H., and W. B., and how many grains per lb. must be added to make the R. H. 50 per cent? What will be the W. B., then?

Solution—

Grains per lb., sat. at zero = 5.47
" " " 50 per cent R. H.; zero = 5.47 × 50 per cent = 2.73
" " " sat. at 70 deg. Fahr. = 110.5
" " " 50 per cent R. H.; 70 deg. Fahr. = 110.5 × 50 per cent = 55.2

R. H. at 70 deg. Fahr. = 110.5 ÷ 2.73 = 2 per cent with W. B. 44 deg. Fahr. but with 70 deg. Fahr., 50 per cent, W. B. = 58 deg. Fahr. Grains added = 55.2 minus 2.73 = 52.47.

Published by Automatic Heat and Air Conditioning

15—
Air Mixtures—Temp.

Air mixtures have a temperature depending on the temperatures of the air used to produce the mixture and on the relative proportions of air at each temperature.

Formula—

Temp. of Mixt. = $T_1a + T_2b + T_3c + T_4d$, etc.,

when T_1 is the temp. of the air
"a" is the percentage of air at T_1 temp.
T_2 is the temp. of the air
"b" is the percentage of air at T_2 temp., etc.

Problem—

What is temp. of a mixture of 25 per cent outside air at zero and 75 per cent recirc. air at 70 deg. Fahr.?

Solution—

70 deg. Fahr. × 75 per cent + 0 deg. Fahr. × 25 per cent = 52½ deg. Fahr. + 0 deg. Fahr. = 52½ deg. Fahr.

Problem—

What temperature will result from mixing 5,000 lb. of air at 40 deg. Fahr., 2,000 lb. at 70 deg. Fahr., and 3,000 lb. at 20 deg. Fahr.?

Solution—

$$\frac{5{,}000 \times 40 + 2{,}000 \times 70 + 3{,}000 \times 20}{10{,}000}$$

= 40 deg. Fahr.

Note . . . Lb. or cu. ft. may be used in place of per cent if the whole is divided by the total lb. or cu. ft. involved. (See problem above.) The use of cu. ft. is inaccurate owing to variations of expansion.

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These four tables carry on the series which was started in the January issue. The information has been developed so as to be similar to that which the reader might gather in the form of notes while studying complete articles and text books on the subject of air conditioning

16—
Air Mixtures—Humid.

Air mixtures have an absolute humidity depending on the absolute humidities of the air used to form the mixture and the relative proportions of the air at each humidity.

Formula—

Grs. per lb. in mixt. $= G_1a + G_2b + G_3c + G_4d$, etc.

when G_1 is grains per lb., in air
"a" is percentage of G_1 air
G_2 is grains per lb., in air
"b" is percentage of G_2 air, etc.

Problem—

An air mixture consisting of 75 per cent at 55 grs. per lb. and 25 per cent at 3 grains per lb. is formed; what is the absolute humidity of the mixture?

Solution—

55×75 per cent $+ 3 \times 25$ per cent $=$ $41.25 + 0.75 = 42$ grs.

Problem—

What is the absolute humidity of 5,000 lb. of air at 50 grs. mixed with 3,000 lb. at 30 grs. and 2,000 lb. at 70 grs.

Solution—

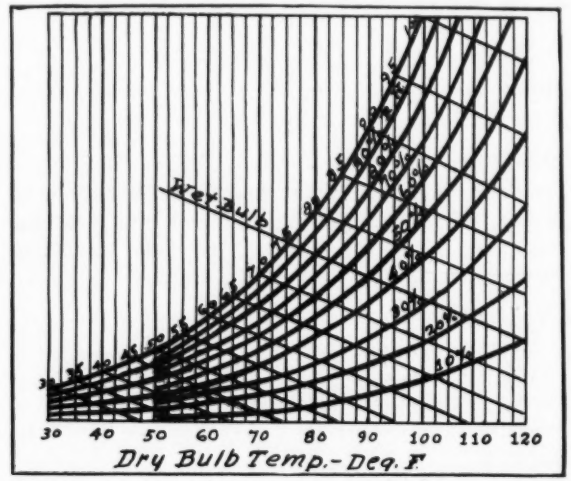
$$\frac{5{,}000 \times 50 + 3{,}000 \times 30 + 2{,}000 \times 70}{10{,}000} = 48 \text{ grs.}$$

Note . . . Lb., or cu. ft., may be used in place of per cent if the whole is divided by the total lb. or cu. ft. involved (see problem above). The use of cu. ft. is inaccurate owing to variations of expansion.

Published by Automatic Heat and Air Conditioning

13—
Wet Bulb Temperature

The chart shown below indicates the *wet bulb temperature* for any given dry bulb temperature and humidity. When both dry bulb and wet bulb temp. are known, the relative humidity may be read direct from the chart.



Note . . . The summer comfort zone extends from 66 degrees to 75 degrees effective temperature, with the comfort line at 71 degrees e. t. Any set of conditions falling within this zone will satisfy at least 50 per cent of people and any set falling on the comfort line satisfies 97 per cent.

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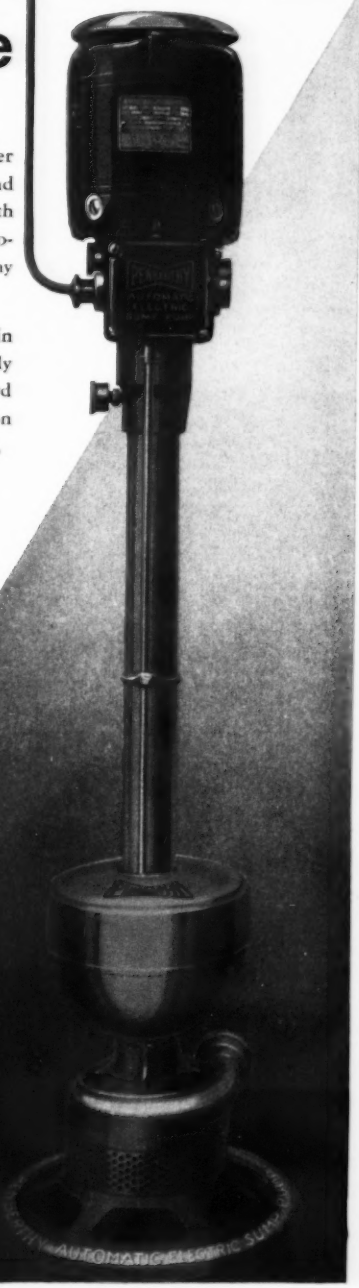
PROVED by 1,032,716 YEARS of Satisfactory Service

THE plumbing contractor who installs Penberthy Pumps wherever seepage water must be removed is assured of profitable sales and well satisfied customers. He is taking no chances because both Penberthy Automatic Electric Sump Pumps and Penberthy Automatic Cellar Drainers have been tested and proved for many years under the most severe operating conditions.

The Penberthy Sump Pumps and Cellar Drainers now in satisfactory service have a combined life of approximately 1,032,716 years. This remarkable performance record is the result of (1) copper and bronze construction throughout, (2) rugged and advanced design, (3) precision workmanship.

Leading jobbers carry Penberthy Pumps in stock. Use them whenever you have a seepage water job.

★ COPPER AND BRONZE THROUGHOUT ★



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PENBERTHY AUTOMATIC CELLAR DRAINER
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Made in 6 Sizes

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Manufacturers of Quality Products Since 1886
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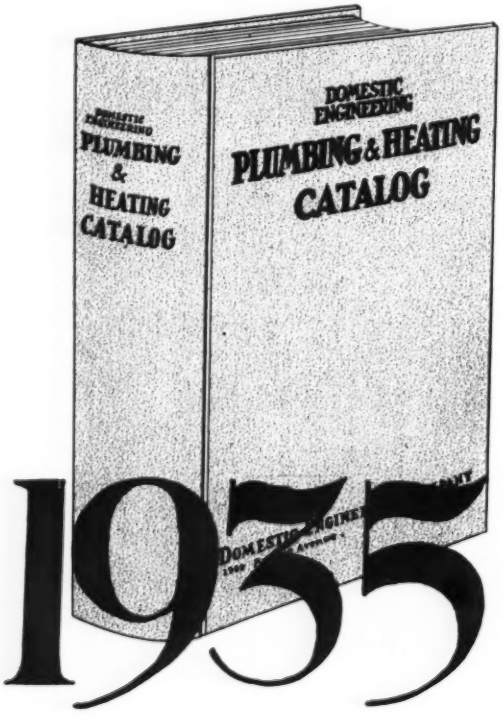

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PLUMBING & HEATING CATALOG

Old Homes are being modernized or remodeled—Old Equipment will need new parts or replacement. Do you have reliable purchasing and specifying information at your finger tips? The following data is available to you for instant reference.

1. Where to buy all supplies in the plumbing and heating industry.
2. Hundreds of up-to-date manufacturers' condensed catalogs.
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6. Tables, rules, charts and layout diagrams.

Use the 1935 Domestic Engineering PLUMBING and HEATING CATALOG to speed up your estimates.

Domestic Engineering Company
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Order now—receive a full year of valuable service.

Domestic Engineering Plumbing and Heating Catalog,
1900 Prairie Avenue, Chicago, Illinois.

We hereby authorize you to enter our order for one copy of the 1935 edition of the Domestic Engineering Plumbing and Heating Catalog for which we agree to pay five dollars upon receipt of the catalog.

Firm ..... **Mark book for Mr.** .....

Street Address ..... **City and State** .....

DE-4-35 **Signed by** .....

First Prize Winners Tell of FHA Methods

Here are ideas which can be used in working with FHA sales programs. Plumbing and heating contractor-dealers have produced sales with them. Also, they will indicate how your FHA activities can be written and entered in the Second FHA Prize Contest

HERE are some of the ideas and methods for getting plumbing and heating business through FHA, which won prizes in the First FHA Prize Contest. This information can be used in two ways. First, it can be used by various individual contractor-dealers in promoting their own FHA repair and remodeling businesses. On the other hand, it will serve to indicate how easy it is to enter the Second FHA Prize Contest so as to compete for the big International motor truck or one of the many substantial cash prizes.

ADVERTISING HAS BROUGHT RESULTS

J. A. Campbell, proprietor of Home Plumbing and Heating Company of Twin Falls, Idaho, wrote as follows in his entry:

"We have used a quantity of advertising which has brought results. On our radio advertising, we must have reached out. In the past several months we have received orders for pump repairs from Louisiana, South Carolina and North Dakota.

"We are the only ones here who do advertise, and by continually pegging away at the public from all different angles, we feel we are well repaid for the expense we go to. We are connected with the FHA campaign. Also we are cooperating in a three-month exposition show of all lines of business, which is bound to get results. It just started December 1st, and by the sixth, 22,000 people had passed thru the electric eye register.

"Twin Falls is growing and we are going to grow with it. I have been twenty-four years building up for this and I believe our time is coming. *I look for more work, next summer, than we can handle.* Almost all of my work now is time and material. Do not have to figure to get it, good business methods got it for me long ago and I am holding on to it."

A prize winning experience from H. C. Silvis of Sheboygan, Wisconsin, is told in his letter which follows:

"A customer of mine informed me his friend had a leaky hot water tank to repair. I went to the man's house, found a new one was necessary, got an order for a new one and installed it.

"Before I left his wife told me they were interested in buying some new bathroom fixtures. Already she had been to a local D.t.u. store, picked the styles and got the prices. I asked her why she wanted D.t.u. fixtures. She replied that it was because she could get them cheaper and on the installment plan. To my surprise she asked me to install the D.t.u. fixtures. I asked her for a description of the styles she selected and also the prices, which she promptly gave me. I then told her that I do not install D.t.u. fixtures. Being in business, I sell quality fixtures. 'Well,' she said, 'I always thought your quality fixtures were so expensive.' I answered, 'not if you consider quality Mrs. Jones. I can give you a better buy in fixtures than the D.t.u. and you still can pay for them on the installment plan. Through the FHA you can borrow money from any bank or loan company and repay it in small sums. I'll go along with you and help you make arrangements to get this loan. You can repay this loan in monthly installments. The D.t.u. store would only sell you fixtures on this basis and the bank through the FHA will loan money to you on the same basis, and you can buy the fixtures from me. The labor in each case would be the same.'

SATISFIED CUSTOMERS BRING SUCCESS

"I had brought a new catalog with me and showed her the fixtures. She pointed out the style of fixtures she wanted. With D.t.u. prices for comparison, I told her that for only a relatively small amount more I could give her better fixtures. I took her to the showroom and showed her these fixtures, and asked her if she didn't like the appearance of these fixtures better than the ones at the D.t.u. store. Also I pointed out that for the increase in price she could expect a better style in design. 'In other words you invest a little more and you get more. After all the fixtures at the D.t.u. store really are not any cheaper.' She was surprised that the difference in price was so small for quality fixtures.

"I am a great believer in advertising and manage to keep my name before the public by school and church papers, house to house circulars and direct mail advertising. I'm keeping in close contact with men that are able to give me leads to prospects. But, my greatest

success comes from satisfied customers. Through this method I have less sales resistance in getting new customers, and I get to know their needs. When I get a new customer I make it a point to do the first work at their homes myself. I begin to suggest changes and try to sell new material. When the FHA program came in I had prospects to work and received good returns for my effort and increased my business in September to December, 1934, by 30 per cent over 1933 same period.

"I seldom use high pressure salesmanship, only once in a while this method is required. By using a slow method of selling, I can sell more goods and have a more satisfied customer, which I find is the best advertisement that money can buy.

WORKED ON PROSPECT TWO YEARS

"One bathroom change that I had worked on for two years was followed up in my FHA Program and after trying to get it financed through our local banks, with the customers credit 100 per cent they failed due to our banks not having a clear understanding of the campaign. They were about to give up when I found out they had some good stock certificates and suggested they put this up as collateral, which they did and got the money. This job amounted to $245.00 for the plumbing and about $100.00 for the tile work. (Collateral is not necessary on the FHA plan.)

The most interesting sale I have had this year came through one of my customers. I was called in this home to give a figure on a shower over a leg tub and on installing a new bowl to replace one that had been cracked. I saw an opportunity to sell new fixtures, so I began to work and made an appointment to have them look over new fixtures the next day. (I never fail to be on time when I have an appointment.) This day's sale ended in a $348.00 time and material job. By close observations I found that the husband was boss over the bathroom and garage and that the wife controlled the balance. So, the wife had to be sold on the balance of the material. After 30 days I had sold and installed $571.00 worth of my material and created work for other building tradesmen. The owner felt he did not have the money to do all this work so I interested him in the FHA program. But when the work was completed he paid cash. Where he got it, I do not know.

"They were well satisfied and just called to have a heat control installed in a house which they own and rent to tenants."

Better than merely offering plumbing and heating in general is the selling plan of selecting some specific thing you wish to have installed then showing prospects how they can profit thereby. This, in a nut shell, is the policy followed by a Long Island, New York, contractor who has found the Federal housing movement of decided aid in securing modernizing contracts.

Pursuing this idea actively, daily he makes personal visits to local buildings, inspects the plumbing and heating in use then interviews the owners if he sees definite needs. Intimate knowledge of suitable improvement equipment and correct installations methods has enabled him to explain the advantages so clearly that orders, particularly for heating, have kept him and his staff busy since early fall.

"If the contractor knows his line," he declares, "he will find something to sell in almost every building he enters." How this worked out for him might be explained in a recent call he made on a country mansion owner. The lady of the house complained that she had to use two tons of coal weekly to heat her 16-room dwelling. What was the matter? The contractor made a careful examination, spending the better part of one morning finding out. He noted, for example, that all radiators were finished in a handsome, blue shade with shiny finish. This must come off and light, flat covering be substituted.

The boiler was entirely uninsulated. One-sixth of the heat generated was radiated to waste here. The boiler would have to be insulated with not thinner than 1½ in. of covering. There were air pockets in pipe lines and radiator vents were heavily plugged. To make a long story short, the contractor sold an oil-fired boiler and obtained a total contract approaching $1,200 by guaranteeing to reduce the fuel cost 50 per cent. This order led to many others among the customer's friends. The case is typical.

WORKED WITH OTHER CONTRACTORS

When the Federal Government's better-housing campaign was launched a few months ago he joined several other contractors in other lines and purchased five full pages to run weekly in the local newspaper to advise townspeople that here was one plumbing and heating contractor, at least, who wished to help people modernize. The response, which was immediate, has been gratifying. Early inquiries were followed by others received after the advertising in the newspaper ceased. Quotations, orders and filling contracts have continued and still keep the contractor busy because the publicity has given him the stamp of being the local "modernizing contractor" in plumbing and heating.

Another good source of leads has been old card files. Always alert to future business opportunities, he has been filing prospect information for the last six years. Now the leads are being used, prospects are being interviewed. The previous excuse for not purchasing, namely, lack of funds, no longer obtains. This plumbing and heating contractor is prepared to secure FHA loans.

Water Supply—

(Continued from Page 52)

were grouped to save pipe friction between the pump and the tank. The different units were set on a suitable concrete foundation and care was taken to make the very simple house well insulated. With the help of a small oil heater it has remained in service until the Christmas holidays without freezing although the outside temperature has been as low as 20 deg. Fahr. below zero. The pipe leading to the house was of course buried below the frost line of early winter.

This is just an example of the kind of thing a man in Harry Bunker's position is called upon to handle. Some are more complicated and others are very simple. It shows the possibilities in this class of work for those located in territory similar to the one described in this article.

THE BIGGEST SCOOP SINCE "Standard" NEO-ANGLE

NEO-LINE SINKABNET P6651

THE NEO-LINE CABINET SINK

Completely NEW.. *Superbly* EFFICIENT

BATH tubs were much the same . . . until the "Standard" Neo-Angle captured the admiration of All America with features really new and valuable.

Now comes the "Standard" Neo-Line Cabinet Sink — destined to duplicate the spectacular record of Neo-Angle Bath — because it brings values heretofore unknown in sink construction.

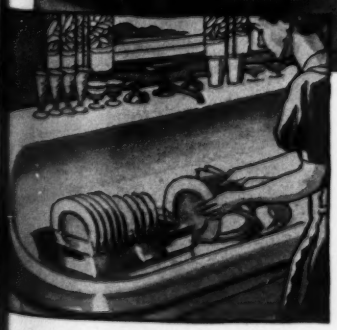
It is a Cabinet Sink — new in principles — advanced in design. And women are demanding cabinet sinks for convenient, close-at-hand storage.

Opening of heavy drawers is completely eliminated by shelves in easily revolved cylinders, under the drainboards. A mere touch opens or closes the capacious shelves.

The sink, too, is new! Graceful curves make it extremely handsome . . . and practical. Note the features illustrated at the left.

These are features of genuine value not found in the old type sink — every feature in line with the modern demands of the modern woman, yet the Neo-Line Sinkabnet is distinctly moderate in price. Display the "Standard" Neo-Line Sinkabnet to the limit of your ability, talk its sweeping superiorities, and feature it in your F H A campaign and you should beat any sales record possible with any other sink.

Apply to your Wholesale Distributor for details of delivery.



BETTER · HOUSING · PROGRAM

The back rounds up and out to a 6-inch shelf — tremendously convenient for items needed while cooking, for clean placement of foods being prepared, and for soap, powder, and fragile pieces when washing dishes. Drainboard recesses four inches, adding useful area in sink and drainboard.

Front corners are rounded to a 9-inch radius, easy to work around, space-savers in modern small kitchens.

Sink compartment is oval, no hard-to-clean rectangular corners.

Crumb cup and stopper are optional equipment.

Drain grooves have flat tops, adding to appearance, providing rapid drainage and avoiding tilting of cups and glasses.

Standard Sanitary Mfg. Co.

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

"NOW WE CAN HAVE NEW PLUMBING FIXTURES WITHOUT OUR NEIGHBORS SEEING US APPLY AT THE BANK FOR A LOAN! WE CAN GO DIRECT TO OUR MASTER PLUMBER."
"IT DOESN'T MAKE ANY DIFFERENCE ABOUT MY LOW BANK ACCOUNT NOW—I CAN ASK THE MASTER PLUMBER TO HANDLE ALL THE DETAILS OF FINANCING THAT NEW BATHROOM."
PROSPECTS ARE EAGER TO BUY—
when you make it easy to
PAY
BETTER · HOUSING · PROGRAM
"WE DON'T NEED ANY BANKING CONNECTIONS NOW TO PUT IN MODERN PLUMBING — OUR MASTER PLUMBER WILL ARRANGE THE FINANCING."
"I HAVE BEEN AFRAID MY BANKER WOULD NOT APPROVE A LOAN FOR NEW PLUMBING FIXTURES IN MY APARTMENT HOUSE. NOW I CAN GET THIS SERVICE FROM MY MASTER PLUMBER."

The "Standard" plan of FHA modernization loans is handled

ENTIRELY BY THE MASTER PLUMBER

AND REMOVES CONSUMER FINANCING FEAR

MANY home owners are holding back . . . hesitating about consulting a bank . . . afraid that the lack of immediate cash may prevent them from qualifying for a modernization loan under the FHA Plan. Many people have no banking connections. Others dislike having neighbors know they are borrowing money. These doubts and fears are preventing thousands of property owners *right now* from going ahead with modernizing their plumbing.

Now you can remove all these barriers . . . help these home owners with their financing problems . . . immediately increase your business . . . through a simple, easy Government-approved payment plan. "Standard", through its affiliated Company, the Heating and Plumbing Finance Corporation, makes it possible for you to offer "Standard" Plumbing Fixtures without down payment — without red tape . . . with as long as three years to pay on FHA terms.

Explain to your customers that you can take care of all the financing details . . . that it is not necessary to consult anyone else . . . that the transaction is entirely confidential. You will be surprised how many people will appreciate this service.

"Standard" is continuing its newspaper advertising, telling the Public that Licensed Master Plumbers can arrange the financing of "Standard" Plumbing Fixtures, and assure satisfactory service and protection of health through skillful installation. You can tell *your* customers about it by using the many advertising helps which "Standard" furnishes *free.* Write today for samples of the broadsides, circulars, letters, window streamers and other materials ready for your use.

Standard Sanitary Mfg. Co.

PITTSBURGH, PA.

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

QUESTIONS *and* ANSWERS

In this issue: 1—*Question is that of protecting lettering on the side of truck.* 2—*Let equipment function to serve purpose for which it is designed.* 3—*Problem with multiple heaters.* 4—*What are the boiling temperatures for water with various pressures*

1—

TO THE EDITOR:

About 18 months ago, we had our name lettered on the side of our truck with gold-leaf. For protection, we waxed the panels several times. We would now like to give it a coat of spar varnish or clear lacquer. Which would you advise?

Pittsburgh, Pa. A. B.

TO THE READER:

We believe that one or two thin, well brushed coats of outside spar varnish would give you best results on your truck.

From the standpoint of protection, nothing need be applied over the gold letters since real gold-leaf is much more durable than any varnish that might be applied over it. Some lacquers incidentally, are made with vehicles that have a softening effect on any paint film and if you do plan to use a lacquer we would suggest that you try it on an inconspicuous part of the truck before going ahead with the entire job. The varnish will not have any softening effect. Keep in mind that all of the wax that has been used on this truck must be removed before any lacquer or varnish is applied. Wax does not supply a suitable foundation for paint or varnish.

2—

TO THE EDITOR:

In Fig. 1 is shown the rough sketch of a house we desire to heat in part with a large size stove having a 40 gal. range boiler connected with it. The problem is to heat the two rooms with hot water radiators; there is no basement and no attic for the two rooms to be heated and the pipes must be run underground from the hot water tank to the radiators. Can we heat these rooms in this manner and, if so, what size of pipes must be used? Is a 40 gal. boiler large enough? How should the radiators be connected to secure the best results? Is one relief valve enough and where should it be placed? Should each radiator be connected to the tank direct or may both be placed on the same circuit?

Wyoming. S. A. L.

TO THE READER:

It seems to us that you are basically unwise to attempt to carry out any kind of heating which is dependent on a kitchen range for satisfactory service. There are several reasons for this opinion. One is that if you plan to have a radiator system of heating, you should use the equipment which is designed for it and not have a makeshift. Another reason is, due to the fact that the fire in the range is run in accordance with the cooking requirements and not to meet the outside temperature conditions, it takes no more fire to cook on a zero day than it does on a summer day but the heating load on the radiators is vastly different.

To answer your question, the system which you propose will not circulate by gravity. Some small size of circulating equipment to force the water over to the radiators and back would overcome this difficulty. All high points in the piping will have to be air vented and

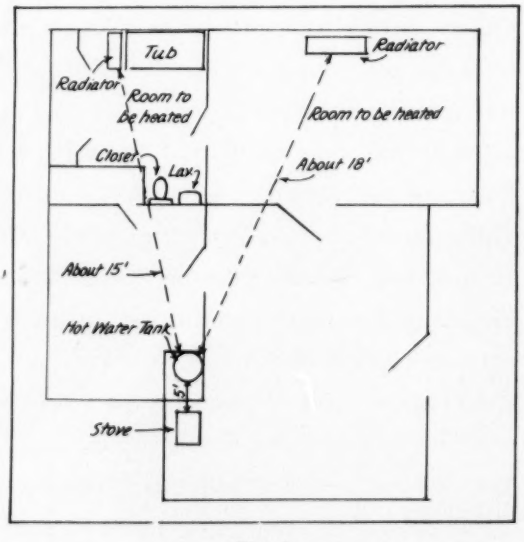


Fig. 1

the lines graded up to these air vent points. The water in the tank would be cooled down considerably unless the coil in the stove is considerably over-size for a 40 gallon tank.

Our correspondent has given us no information as to the size of the coil or waterback in the stove and this is of the utmost importance. If the coil or waterback is only adequate for a 40 gallon tank it will be too small

for the heating of the radiators unless the radiation is considerably less than it would appear from the sketch. Suppose the bathroom requires approximately 50 sq. ft., and the large room about 100 sq. ft., of hot water radiation; then the Btu. emitted per hour will be

50 sq. ft. × 150 Btu. or 7,500 Btu.
100 sq. ft. × 150 Btu. or 15,000 Btu.

Total .....22,500 Btu.

while the loss on the piping will be at least 10 per cent more making

Radiation .....22,500 Btu.
Piping 10 per cent more or 2,250 Btu.

Total Btu. required.....24,750 Btu.

Now the ordinary range coil seldom will raise the water in the tank from the cold temperature to the fully heated temperature in less than three hours if the tank is cold to begin with; this means that the coil will supply

40 gal. × 8⅓ lb. or 333⅓ lb. of water
333 lb. × (150 deg. Fahr. — 50 deg. Fahr.) or
333 × 100 degrees which is 33,300 Btu. in 3 hrs.
or 11,100 Btu. in 1 hr.,

provided the coil is in reasonable relation to the 40 gallon tank. It will be seen that the radiators require more than two times as much heat as the coil could reasonably be expected to furnish.

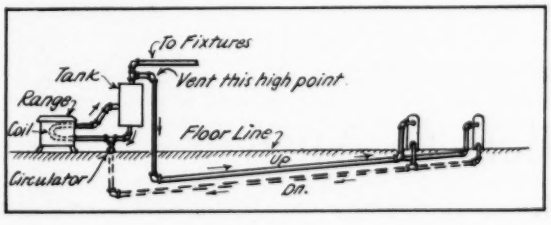


Fig. 2

Our correspondent asks if the tank is big enough but this has nothing to do with the question; the real question is, is the coil in the stove sufficient and we do not believe it will be found to have the capacity to do what is wanted. The water in the tank, (if more heat is radiated than is supplied by the coil), simply will cool down to a point where the radiator emission will balance the heat added by the coil and a state of equilibrium is secured; that, is until the heat emitted equals the heat added.

If our correspondent can check up all of these objections and finds that they do not deter him from still wanting to get some heat from the stove over to the rooms in question, the piping may be laid out in the manner shown in Fig. 2 but we are very dubious about the whole matter as we have tried many experiments along this line and in general they have not proved satisfactory.

The point to keep in mind is that ranges are made for cooking and heating the space they occupy and that hot water boilers and auxiliary equipments are made for hot water heating systems. It is just as illogical to cook a meal on a boiler as it is to heat a radiator with a range.

3—

To the Editor:

Will you be kind enough to help me solve a hot water problem which has been annoying me for sometime? I am enclosing a sketch, Fig. 3, showing a hot water boiler with an automatic gas water heater used in connection with same, the boiler normally being heated by the coil or non-automatic gas heater shown at the side. When the automatic heater shows a temperature of, say 140 deg. Fahr. the faucets draw cold water apparently out of the regular boiler and we can't shut off the 30 gal. boiler because of the coil in the heater which

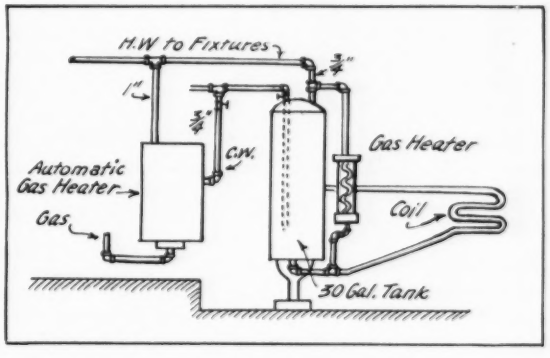


Fig. 3

requires an outlet. We believe that the cold water used to feed the boiler is shooting through the side arm of the gas heater into the hot water main to the fixtures.

New Jersey. C. J. W.

To the Reader:

We believe that there are two things which can be done to eliminate your trouble; one of these is to connect the discharge pipe from the small coil heater into the top tapping on the boiler instead of into the hot water line to the fixtures immediately above the boiler as you have it shown. The other is to take the hot water supply from the boiler and to use it for the

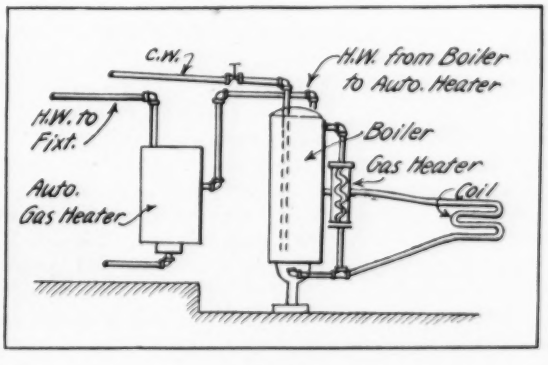


Fig. 4

supply to the automatic heater which will result in having the automatic heater—we assume this heater to be thermostatically controlled—come on only when the temperature of the water supplied by the boiler is below the degree for which the automatic heater thermostat is set.

In Fig. 4 we have shown this alteration and the only difficulty that might be experienced would be in case

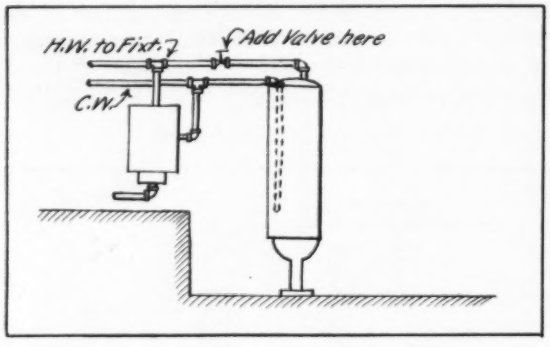


Fig. 5

the automatic heater were turned off and put out of service for long periods, such as during the winter, at which time it would be likely to have the water, fed from the boiler into the automatic heater, cool off and require to be drawn out of the automatic heater before hot water could be drawn from the fixtures. You do not tell us enough about the proposed method of operation for us to know whether this would be objectionable or not. If the trouble occurs only when the automatic heater is in use and none of the other sources of heat in service, then a valve in the hot water outlet of the boiler would prevent this cold water entering the line to the fixtures and this could be opened up at times when the other heaters go into service and the boiler is heated by them. See Fig. 5. Provision for temperature and pressure relief are understood.

4—

To the Editor:

Can you give me data on the temperatures at which water will boil under different pressures?

Cleveland, Ohio. A. B. D.

To the Reader:

The temperature at which water boils is determined by the pressure on the water and the following list selected from ordinary steam tables will give you an idea of these temperatures:

Gauge Pressure Lb. per Sq. In.	Boiling Temp. Deg. Fahr.	Gauge Pressure Lb. per Sq. In.	Boiling Temp. Deg. Fahr.
0	212	80	313
20	258	100	338
40	286	150	359
60	307	200	387

Intermediate pressures have temperatures fairly proportional and reference to any set of steam tables will give you the exact temperatures for almost any pressure.

Questions for Readers to Answer

The following question was asked in the February issue and the following answer is by a reader:

Which will carry off more water, a 6 in. drainage line pitched ¼ in. per ft. or an 8 in. drainage line pitched ⅛ in. per ft.?

The quantity of water which a drainage line will carry off is dependent on the size of the line and the pitch at which it is laid. A given line laid at ¼ in. pitch will carry off more water than the same line laid at ⅛ in. pitch. This is because the water flows more rapidly in a line laid with a sharper slope than it does in one which approaches more nearly a flat condition.

One table on the flow of water in sewer pipe gives the capacity of a 4 in. pipe with a fall of 2 ft. in 100 ft. (which is practically ¼ in., to a foot) as 131 g.p.m., while the same table gives as the capacity of a 6 in. pipe laid with a fall of 1 ft., in 100 ft. (which is practically ⅛ in. per foot) as 258 g.p.m. Therefore, I should say that the 6 in. line would carry off more water even with the smaller pitch.

One thing which often is taken advantage of in sewers where a very slight pitch must be used is to allow for the building up of a small amount of head at the high end when this is permissible and the calculating of the capacity of the sewer the same as though the pitch included both the slope of the sewer and the accumulated head on the high end. For example in the above, if a vertical pipe came into the high end of the 6 in. sewer and it was desired to carry off more water than the ⅛ pitch would carry, it might be assumed that the head in the vertical pipe built up a height of 12 in. in times of heavy load which would give the sewer a carrying capacity equivalent to that based on 1 ft. fall in 100 ft., plus 1 ft. of head or a 2 ft. fall in 100 ft. The capacity of a 6 in. sewer with the equivalent fall of 2 ft. in 100 ft., according to the same table would carry off about 364 g.p.m., or an increased capacity of about 41 per cent over what it would carry off without the building up of the 12 in. of head at the high end.

How Would You Answer This Question?

A gravity hot water system with 500 sq. ft. of radiation and pipe losses averaging 25 per cent has the water leaving the boiler at 180 deg. Fahr. and returning at 160 deg. Fahr. How much water is circulating in the system under this condition and to what extent must this be speeded up, in g.p.m., by a circulating device in order to have the average water temperature in the radiator 175 deg. Fahr.?

Answers based upon your experience, suitable, will be paid for and published in the June issue.

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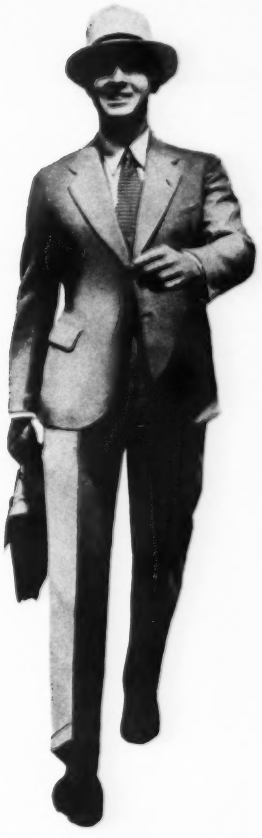

☆

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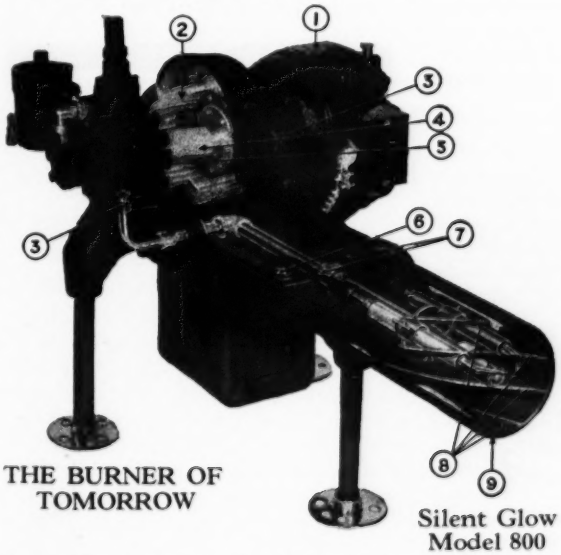

THE BURNER OF TOMORROW

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Flex-ile Drive (4) together with rubber motor housings (3) eliminates vibration.

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CONTENTS OF THIS FREE BOOK

1. The Friendly Way We Will Help You.
2. Suggestions for Keeping Down Heating Costs.
3. Looking Into the Different Systems.
4. Speaking of Automatic Heat.
5. Fuels. What One Is Best for You?
6. That Little Big Question of Radiators.
7. Hot Water. How to Keep in It.
8. Year Around Automatic Hot Water.
9. Choosing Your Oil Burning Boiler.
10. Stokers and Gas Fired Boilers.
11. Importance of Air Valves.
12. Round or Square Boiler, Which Is Best?
13. Basement Recreation Rooms.
14. Your Many Questions All Answered.
15. Heating Helps Sent Free.

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The questions and answers which appear on this and the several following pages have been selected to be of particular interest to plumbing and heating contractor-dealers who are active in making installations for automatic heating and air conditioning. The answer to the first question gives practical information on drips

PROBLEM IN DRIPPING STEAM MAINS

To THE EDITOR:

Enclosed you will find two sketches numbered Figs. 1 and 3 on which I would appreciate some information. In Fig. 3, due to the low head room, the steam main has to be stepped up three times; how may drainage be secured? Where do you do the stepping up? Please explain for both a one-pipe and two-pipe steam heating installation.

On Fig. 1 the steam and return mains are run 12 ft. below the floor level. Could the vacuum pump be located on the floor or must it be located below the return main so as to drain same? Where would the vacuum equalizer be placed between the steam and return main? With a 10 in. vacuum how high could you lift with a

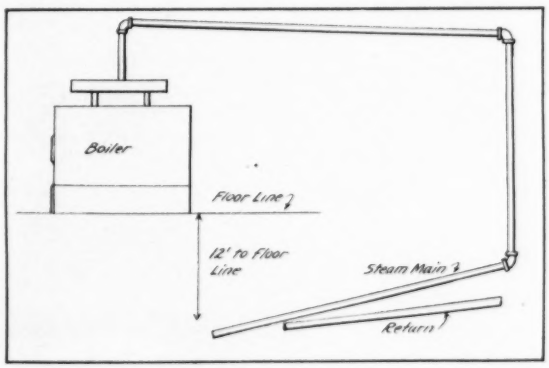

Fig. 1

lift fitting? I am enclosing a self-addressed stamped envelope for an immediate reply to the above questions.

South Carolina H. H. C.

To THE READER:

Considering Fig. 3 for the moment, it is seen that this is a one-pipe system with the steam main raised at certain points during its progress around the basement. Our correspondent is interested in a method of draining the low points which occur in the piping when the rise is made and in Fig. 4 a typical method of drainage is shown. All that is necessary is to run a drain pipe from the low portion of the steam main down under the water line of the boiler and then to connect under the water line to the other drips provided in a similar manner and to run the wet drip return into the main wet return where it drops down to enter the boiler as shown very clearly on the sketch which is drawn in elevation.

This method of dripping may be used with equal satisfaction on both one-pipe and two-pipe systems and has the advantage of water sealing one drip from the

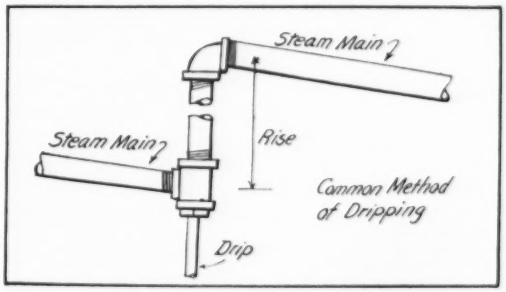

Fig. 2

other. The method of connecting the drip to the steam main may be either the common one of simply terminating the low main with a tee from the bottom of which the drip is taken and from the top of which the riser for the steam main is run; or the tee may be turned horizontally and the main continued a foot or so past the rise then terminated in a full-size elbow and a reducer from the bottom of which the drip is taken. Both of these methods are illustrated in Figs. 2 and 7. The method of Fig. 7 is considered superior to the one shown in Fig. 2, as it will take care of slugs of water when starting up cold much better than when simply the dripped tee is used.

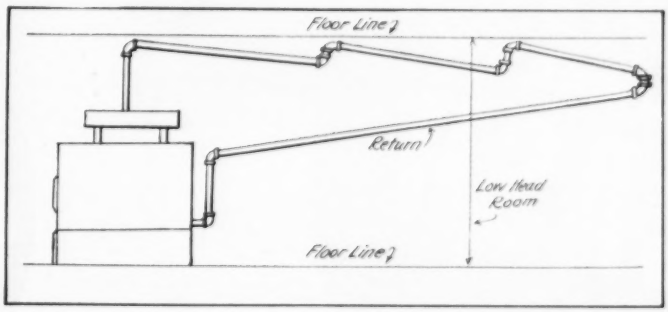

Fig. 3—The sketch at the right shows an elevation drawing which outlines the reader's problem

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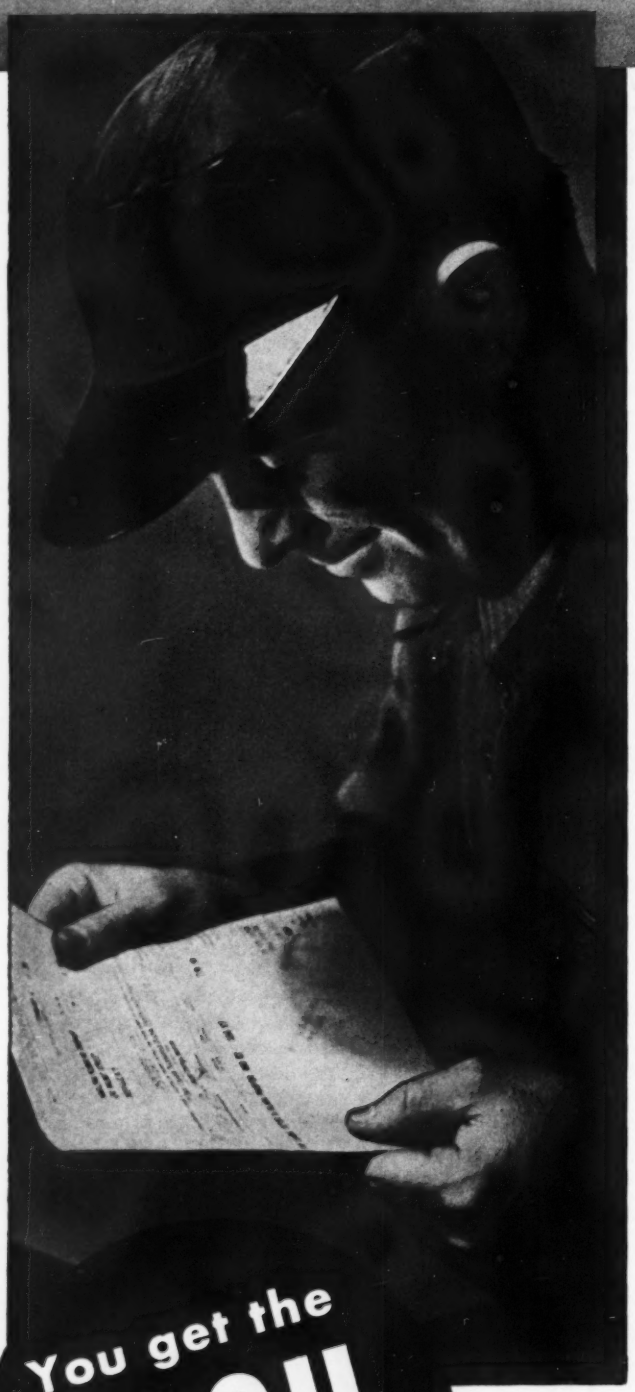

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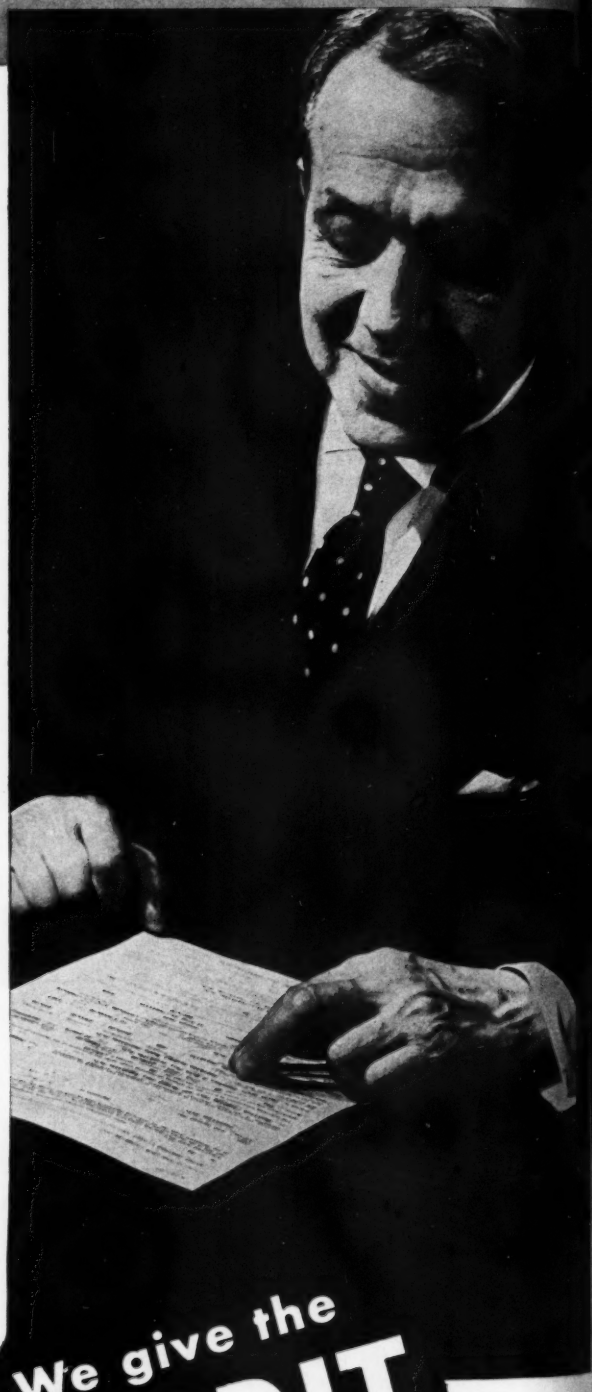

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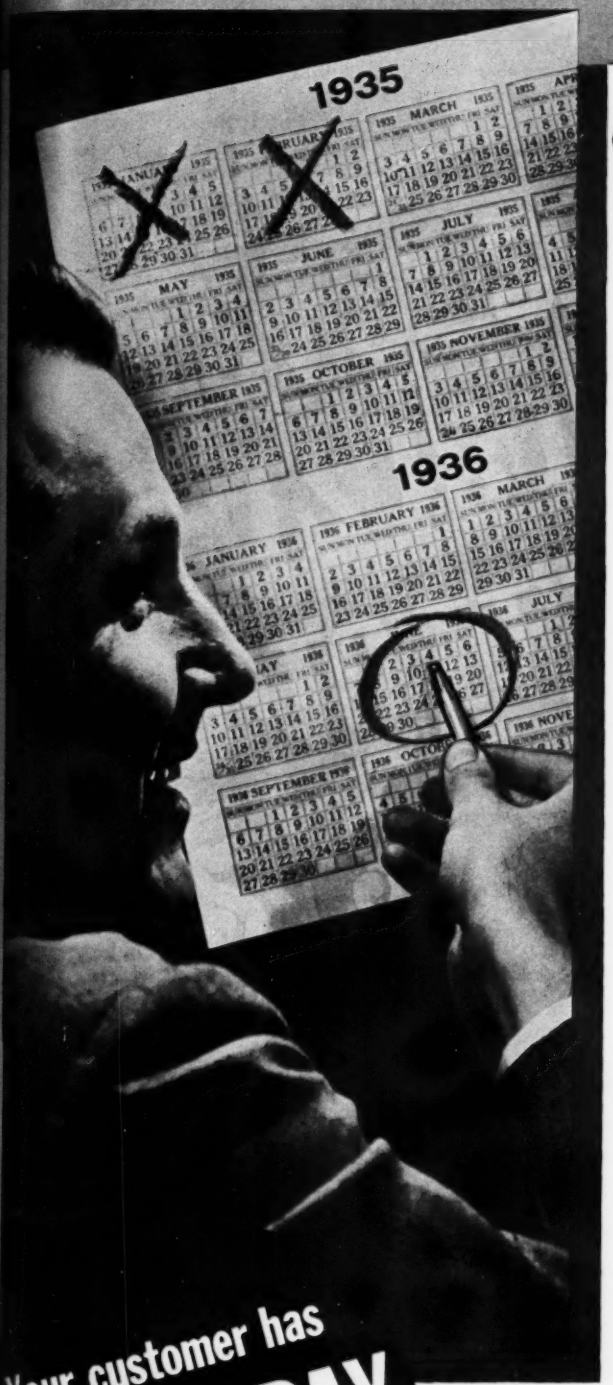

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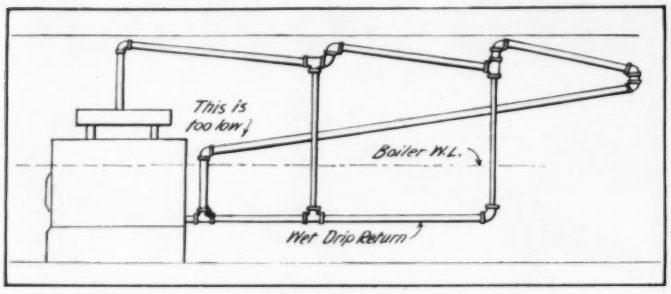

Fig. 4

We would call our reader's attention to the fact that in Fig. 4 the end of the dry return main is too near the water line but this may be due to the original sketch being slightly out of scale. If our reader desires to avoid the wet return for the drips as shown in Fig. 4, this may be done by connecting into the main dry return

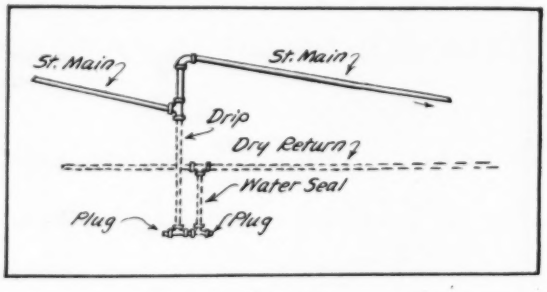

Fig. 5

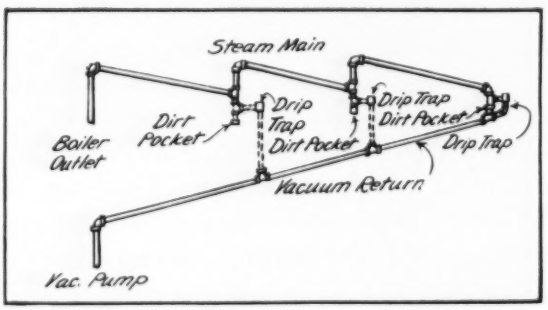

Fig. 6

(using a water seal of sufficient depth not to be blown out by the differential between the pressures at the two points of connection) or drip traps similar to the method used in a vacuum system may be utilized. The method of installing drips of this character for a vacuum system is shown in Fig. 6 and the method of connecting through water seals to the dry return of a one-pipe or two-pipe system is illustrated in Fig. 5.

The points where the rises come may be made to suit the installation best, as with special drips at each rise it is immaterial where the rise may be located. When drip traps are used, dirt pockets should be placed before the trap to catch dirt, scale, etc., before it enters the trap with the possibility of causing difficulty.

In Fig. 1 our correspondent evidently has another system entirely where the steam main runs 12 ft. below the floor on which the boiler is located and he wants to know if the returns may be raised up to a vacuum pump set on the same level with the boiler. We should recommend the elimination of all lift fittings and the installation of the vacuum pump at a sufficiently low level to drain the steam and return mains by gravity into the pump as shown in Fig. 8 with the pump raising the returns and discharging them into the boiler through an Underwriters Loop. If, however, this is impossible or involves considerable changes, the returns may be raised by the use of several lift fittings arranged so as to lift the return in steps of not over 5 ft. at a time and in this case there would be required a total of three lifts as there is a total lift indicated in this installation of somewhat over 12 ft. How this may be accomplished is shown in Fig. 9 but it is not recommended if there is any other solution which can be worked out for the condition.

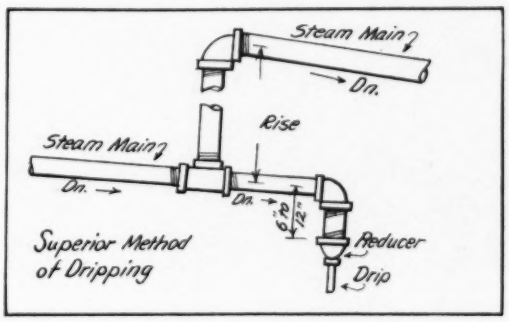

Fig. 7

It is not customary, according to the writer's opinion, to place vacuum equalizers on the ordinary vacuum system. When used they should be placed at the point

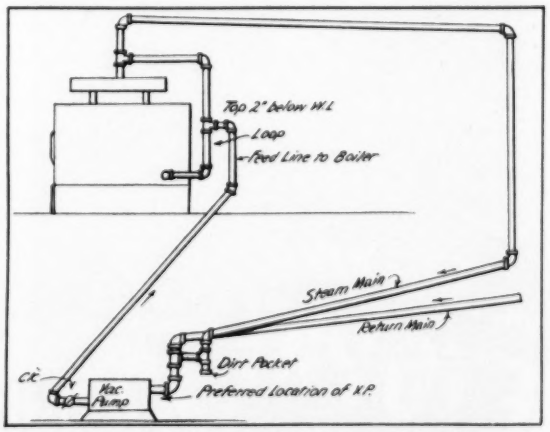

Fig. 8

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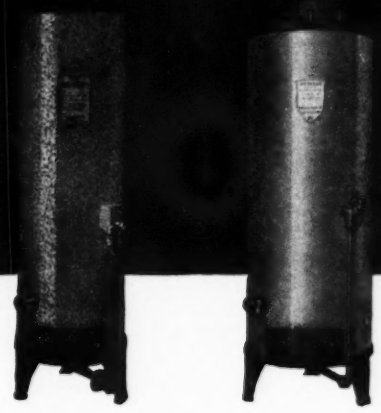

(left) **AGP REGULAR** Gas-Fired Automatic Storage Water Heater; 20 to 75 gallons. Baked enamel steel jacket over Galvanized or Everdur tank; only one gas connection.

(right) **THE DICTATOR** Low Priced Water Heater. Fully automatic, thermostatic valve; baked enamel jacket and tank of Galvanized or Everdur. 15 to 40 gallons.

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or points where it is of the greatest importance that the pressures be equalized.

With a 10 in. vacuum, theoretically a column of water about 12 ft. high could be supported in the lift pipe but the operation of the lift fitting is such that slugs of water

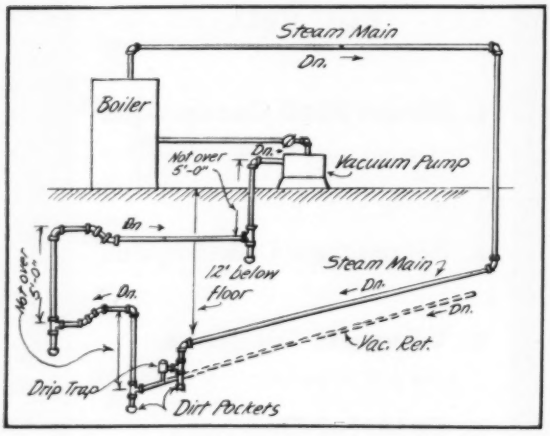


FIG. 9

are alternated with slugs of steam and the weight of the column being raised is considerably less than that of a solid column of water. Therefore, theoretically, a 10 in. vacuum would operate a lift of considerably over 12 ft. in height. Practically, however, lifts over 5 ft. high are not recommended, one reason being that the vacuum pump usually operates between a high and low vacuum limit which may be 5 in., on the low end, and 10 in. on the high end. In this case the lift would have only 5 in. of vacuum to operate it just before the vacuum pump is cut in to raise the vacuum back to the predetermined 10 in. again.

HOW TO FIGURE ELECTRICITY SAVINGS

To the Editor:

An owner of a small factory is using a hot blast heating system and finds that he does not need a full air supply in mild weather and has asked me how much he will save by changing his system so as to run it either full speed, three-quarter speed or half speed. The motor is 10 h.p., 60 cycle, 220 volts and current costs 3 cents per kilowatt hour. The system operates 12 hours a day for 200 days each year, and it is estimated that it could be run half the time with 100 per cent of the air, one quarter of the time with 75 per cent of the air and the balance of the time with 50 per cent of the air. What electric current saving is possible?

New Jersey. L. H. T.

To the Reader:

If the constant speed motor used on this installation, running at approximately full load, is assumed to have an efficiency of about 83 per cent then the current used at present will be

(746 watts/1000)×(10/0.83)×($0.03×2400 hrs.)
or $648.00.

Now, if the factory can get along with ¾ of the air supply for 25 per cent of the time and with ½ of the air supply another 25 per cent of the time, and if a variable speed motor is put in, we must find out what the efficiency of the variable speed motor will be at the necessary speeds to deliver a full supply of air, a ¾ supply and a ½ supply. In the first place it can be proved that when a fan is operated at ¾ full speed it will deliver exactly ¾ of the full air supply and will require 42 per cent of the original brake horsepower. (See Fig. 10.) If it is operated at half speed it will deliver exactly half of the total air and will require 12 per cent of the original brake horsepower. These are ventilating facts that are not so well known as some and they should be remembered because they have a great bearing on the amount of current required to operate a fan in the course of a year. Savings in operating current, of course, are important items.

RATES OF FAN AIR DELIVERY

A fan operated at ¾ full speed then will deliver ¾ of the full air supply but the static pressure developed will be only 56 per cent of the original static pressure; when operated at ½ speed the air quantity will be just half as much but the static pressure will fall to 25 per cent of the original static pressure. The brake horsepower required in this case under consideration will be 10 h.p. at full speed, 42 per cent of 10 h.p. or 4.2 h.p. at ¾ speed and 12 per cent of 10 h.p. or 1.2 h.p. at ½ speed. Now the efficiency of a variable speed motor when operating at ¾ speed with 4.2 h.p. load can be assumed for this problem in the neighborhood of 64 per cent; and the same motor running at ½ speed and with 1.2 h.p. load is around 44 per cent so that it is now possible to compute the current which will be required for each kind of operation and for the time during which such operation will be in use.

First, the time will be considered when the variable speed motor is running full speed. At full speed and full load the efficiency of the variable speed motor can be assumed to be about 82 per cent for this size motor. This gives

(746 watts/1000)×(10 h.p./0.82)×(2400 hrs./2)×$0.03

or

9.1 kw.×1200 hrs.×$0.03 or.....$327.60

while for the ¾ speed the cost of operation

(746 watts/1000)×(4.2 h.p./0.64)×(2400 hrs./4)×$0.03

or

4.89 kw.×600 hrs.×$0.03 or.....$ 88.02

and for the time running at ½ speed the cost will be

(746 watts/1000)×(1.2 h.p./0.44)×(2400 hrs./4)×$0.03

or

2.03 kw.×600 hrs.×$0.03 or.....$ 36.54

Making a total annual cost of operating at the various speeds $452.16

It already has been calculated that operating with constant speed the annual expenditure for current is $648.00 so that the saving in current alone by modifying the speed would amount to

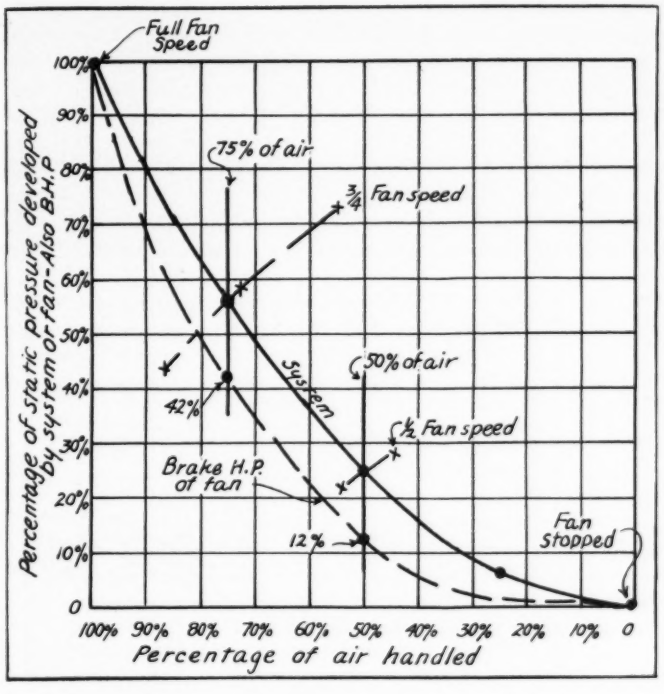


Fig. 10

Cost of operating with constant speed.....$648.00
Cost of operating with variable speed..... 452.16

Saving by modifying speed.....$195.84

This, however, is not the best that could be done because, if a four-speed motor were used running on the three top speeds still more current would be saved as is shown by the following analysis of an assumed general set of conditions:

A four-speed motor when operating at full speed has an efficiency in this size of about 85 per cent; when operating at ½ speed and with a load of 4.2 h.p. its efficiency drops to 81 per cent; and when running at ½ speed with 1.2 h.p. load its efficiency goes down to around 74 per cent. This gives costs for the various periods of operation as follows:

For full speed

(746 watts/1000)×(10 h.p./0.85)×2400 hrs./2)×$0.03 ¼

or

8.77 kw.×1200 hrs.×$0.03 or.....$315.72

For ¾ speed

(746 watts/1000)×(4.2 h.p./0.81)×(2400 hrs./4)×$0.03

or

3.86 kw.×600 hrs.×$0.03 or.....$ 69.48

For ½ speed

(746 watts/1000)×(1.2 h.p./0.74)×(2400 hrs./4)×$0.03

or

1.21 kw.×600 hrs.×$0.03 or.....$ 21.78

Total cost of operating with a four-speed motor $406.98

The comparisons of the different methods now show that, while a variable speed motor will save $195.84 annually, the four-speed will save $648.00—$406.98 or $241.02. Of course there would be an additional saving on steam due to the lesser amount of air handled but this has nothing to do with the reduction in motor current possible with the use of different types of motors the subject considered in this case.

The curves shown in Fig. 10 will illustrate some of the matters brought out in this reply. In this chart the percentages of the static at full speed are listed vertically while the percentages of air against the quantity delivered at full speed are shown across the bottom. The first curve plotted was that of the static resistance of the system with various air quantities flowing. As the friction in a duct system varies as the square of the velocity, it follows that with half the air the resistance will be ¼ and with ¾ of the air the resistance will be 56¼ and with ¼ of the air the resistance will be 1/16. In this way the curve marked "system" was plotted.

Then, from a fan performance table, a fan was selected and the points for the static pressure and air quantity at that pressure were plotted for ¾ speed. That gave the curve marked "¼ fan speed" and similarly for ½ speed. Where these two "fan curves" cross the "system curve" the point of balance is indicated where the quantity of air delivered by the fan at the fan static just equals the same static for the same quantity of air when forced through the system. It will be noted that the points where the two fan curves intersect the system curve come directly over ¾ and ½ the air quantity points.

The brake horsepower required for the fan at these two points was then taken from the performance curves and plotted in per cent of the power required for 100 per cent delivery and it was found that this was 42 per cent of the power at ¾ speed and 12 per cent of the power at ½ speed. This makes a very interesting little study and many of the facts brought out are not as well known in the industry as they might be. The general ideas can be used in making operating economies.

The reader should keep in mind that the figures and percentages used in this problem are for purposes of explanation. The object is to give a method of procedure which might be followed in working out similar problems having given specific data on fan performance, motor efficiencies and the like.

TROUBLE IN GETTING UP STEAM

To the Editor:

We are having trouble on getting up pressure and we are wondering if our boiler is too small as it has a standing radiation of 500 sq. ft. but should do 680 sq. ft. at normal running. We have 800 ft. of standing radiation and 677 ft. hooked on boiler now and can not seem to get heat fast enough and very little up stairs. This

is a boiler with an oil burner—using a 3 gal. nozzle.
Rock Hill, New York. F. L. M.

TO THE READER:

We are of the opinion that you have too much load on the boiler as you state that the boiler is rated at 500 sq. ft. of standing radiation while you already have connected onto the boiler 677 sq. ft. and intend to increase this up to 800.

We believe that if you investigate this matter with the manufacturer you will find that the 500 sq. ft. of standing radiation at which the boiler is rated means just what it says and that the 680 sq. ft. is an allowance for the piping losses and the morning pick-up when a slight overload is liable to occur on the boiler.

If the burner consumes 3 gal. of oil per hour it probably is developing about

18,000 Btu. × 8 lb. × 3 gal. or 432,000 Btu.

and with an average efficiency in the boiler of 70 per cent this will mean that

432,000 Btu. × 70 per cent or 302,400 Btu.

will be transferred into the boiler provided the boiler has sufficient heating surface to absorb this amount of heat.

Changing this Btu. into E.d.r. gives

302,400 Btu./240 or 1,260 sq. ft. E.d.r.

as the maximum capacity of the burner and dividing this by 150 per cent to get the standing radiation gives 1,200 sq. ft./1.50 or 800 sq. ft. as the maximum amount of standing radiation which the burner will supply.

This indicates that the burner has sufficient capacity for the load and if you cannot produce steam either the boiler is too small or there is trouble with dirty or oily water. Better investigate the stack temperatures and water conditions.

ANOTHER QUESTION OF COMBUSTION

TO THE EDITOR:

In your January issue you have a chart explaining how to build an oil combustion chamber. I would like you to explain how this might be used.
Waterville, Maine. R. C. C

TO THE READER:

The chart is based on the allowance of 1 cu. ft. of combustion space to each 1½ to 2 gallons of oil burned per hour, as stated in the text accompanying the chart. See Fig. 11, here. Thus, if a 3 gal. per hour rate is being used, the combustion space required would be

3 gal. × 8 lb./1½ or 16 cu. ft. maximum

or

3 gal. × 8 lb./2 or 12 cu. ft. minimum.

This is ascertained direct from the chart by following the line of 3 gal. per hour from the scale along the bottom up until the diagonal lines are intersected and reading the combustion space required directly from the vertical scale marked "Cu. Ft. of Comb. Space" in the middle of the chart. A leader line of how to do this is included on the chart. It will be found that opposite the upper line the vertical scale reads 16 cu. ft., and opposite the intersection with the lower line the vertical scale reads 12 cu. ft. just as was obtained by calculation in the example followed through above.

If the same vertical 3 gal. line is continued up until it intersects with the long diagonal line near the top of the chart you will find, by proceeding to the left, that this quantity of oil is sufficient for an installation of 1,800 sq. ft. of steam radiation — or, by proceeding

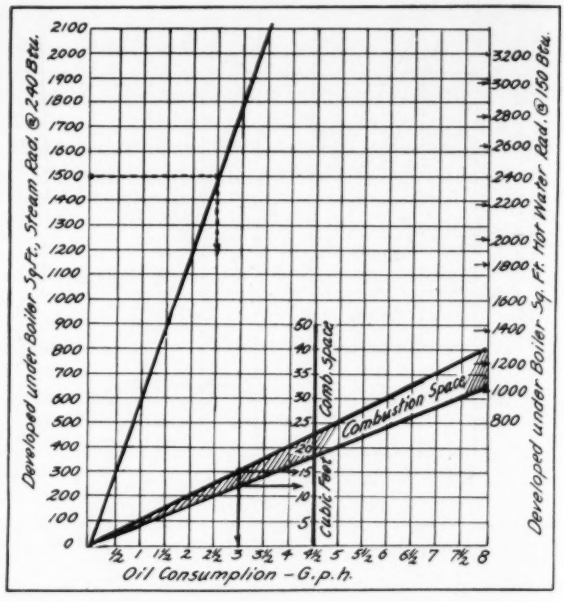

Developed under Boiler Sq. Ft. Steam Rad. @ 240 Btu.
Developed under Boiler Sq. Ft. Hot Water Rad. @ 150 Btu.
Comb. Space
Cubic Feet
Combustion Space
Oil Consumption - G.p.h.

Fig. 11

toward the right, that it is sufficient for an installation of about 2,800 sq. ft. of water radiation. Note that this radiation is "developed under boiler" and must have boiler efficiency and pipe losses considered if you desire to apply it to net standing radiation in the room. The total could be equivalent to direct radiation.

Favorite Mfg. Co. Is Organized

The Favorite Manufacturing Company of Piqua, Ohio, has just been organized by W. C. Katker and has taken over the repair part patterns for all the ranges, heaters and stoves formerly manufactured by the Favorite Stove and Range Co., which was recently liquidated and of which Mr. Katker was formerly president. Mr. Katker is also president of the new company, which is planning to manufacture stoves and heaters.

Radio—

(Continued from Page 61)

The plant itself consists of a large casing to one end of which are led the return air and outdoor air ducts. Within the casing there is a double bank of viscous type filters, a double bank of cooling coils and the fan. Just above the outlet of the fan are three heating coils, one for each of the three duct systems. In addition the room contains two refrigerating compressors, a humidifier pan as part of the recirculated air duct and a tempering coil to warm the outdoor air if this should be needed.

A GREAT COMBINATION FOR Sales

1. A COMPLETE LINE . . . FOR MORE SALES!

2. CUSTOMER ACCEPTANCE . . . FOR EASIER SALES!

● Crane boilers are winning nation-wide esteem for their ease and speed of assembly, low fuel consumption, and general operating efficiency. Their handsome, two-tone jackets are snugly installed with but four screws—this *time saved in installation* means profit for you!

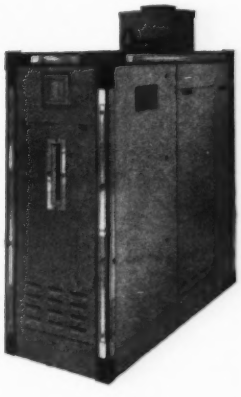
With Crane boilers, radiation, valves and fittings you can stimulate sales by giving your customers new and better products at no higher price. Crane's 79 year reputation spells *customer acceptance*—and that's only another way of saying Crane heating will make you more money!

To Finance Profitable Jobs

Your prospect can modernize his heating plant and radiation *now* if you show him how simple it is under the Crane Finance Plan. You handle the entire job, from application for the loan through to the finished installation. You get your money *immediately*. Here's a plan that gives you *action!*

FOR COAL—Crane Sectional or Round Boilers *featuring*: controlled water travel and elongated flue passages.

FOR OIL—Crane Sectional Oil Burning Boilers *featuring*: ready adaptability to all types of oil burning equipment.



FOR GAS—BASMOR Series 25 Boiler *featuring*: minimum of moving parts, positive control system.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

Since the studios are so thoroughly insulated, the problem of air conditioning is principally one of cooling for the entire year. If the outdoor air is cold enough to supply the necessary cooling, the compressors do not run. When the outdoor air is warm, mechanical refrigeration is used. Each of the two compressors has a capacity of 14 tons of refrigeration and each is connected to one bank of evaporator coils in the casing.

In the summer, the air is cooled to a temperature of 57 deg. Fahr., which is low enough to condense moisture from the air so that studio relative humidity will not

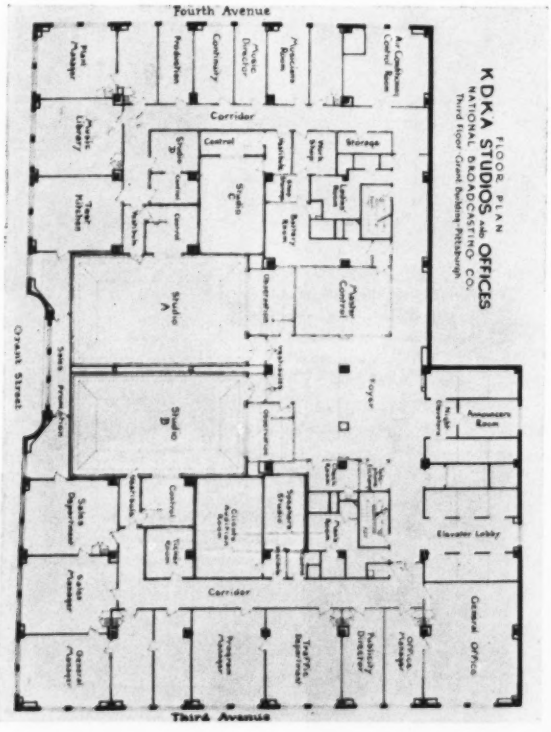


Fig. 5—A plan of the air conditioning facilities which serve the broadcasting studios and the offices of station KDKA in Pittsburgh

exceed 50 per cent. To introduce into the studios air at this temperature would overcool them, therefore, the air is reheated by the steam coils at the entrance to the duct systems and just enough heat is added to hold the correct room temperature. With full load in a studio the air might enter at 65 deg. Fahr. to hold a room temperature at 80 deg. Fahr. With decreased load the temperature of the incoming air automatically rises, but the room temperature remains constant. The air is always just cold enough to counterbalance the heat generated in the room by lights and occupants.

In the winter, the air is humidified by passing over a large water pan in the recirculated air duct. A steam coil in the pan heats the water sufficiently to evaporate the moisture required. A humidostat in the housing controls an automatic steam valve through which the coil is supplied.

The tempering coil in the outdoor air intake is designed for use in cold weather only. With temperatures of 15 deg. Fahr. or above, the reheating coils have capacity to supply all the heat required. To prevent overheating from the tempering coil, there is a by-pass damper which, when open, greatly reduces the heat output of the tempering coil. This damper is controlled by a thermostat in the housing which within the limits of this control holds a temperature of 55 deg. Fahr. in the casing.

The temperature control system in the studios is of the compensated proportioning type. With outdoor temperatures 90 deg. Fahr. or above, the inside temperature is held 10 degrees lower. As the outdoor temperature decreases, the differential between indoor and outdoor temperatures decreases proportionately until both temperatures are the same with 72 deg. Fahr. outdoors. At all lower temperatures the studios are held at 72 deg. Fahr.

The temperature control equipments serve to operate the motor operated valves on the reheating coils. The

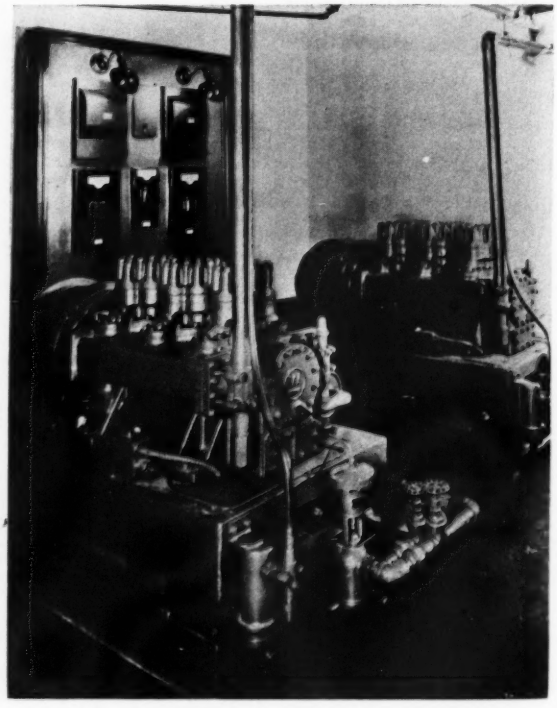


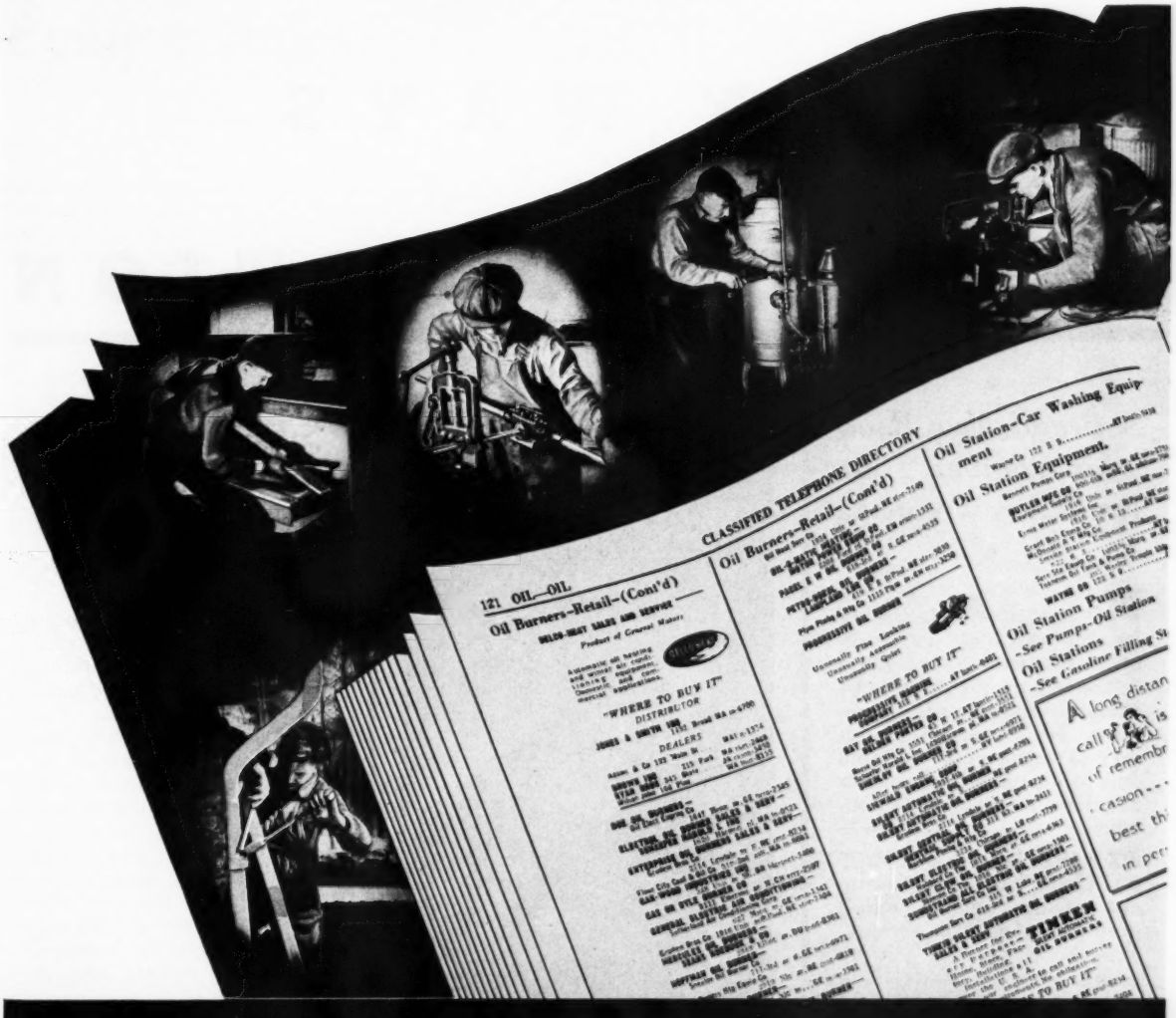
Fig. 6—Here is a view of the machinery room showing the two refrigerating compressors. The recirculating air duct and the humidifier pan are located overhead, above this equipment

air reaching these coils must be held sufficiently low in temperature and they then introduce just enough heat to produce the desired temperature.

Fig. 2 shows the two compressors with the recirculated air duct and humidifier pan overhead.

Fig. 4 shows the side of the casing.

The system, as described, conforms to specifications prepared by the engineers of the National Broadcasting Company, which company operates the studio.



Uncover NEW SALES through the classified telephone book!

Many new sales are blossoming out in your town. They are hidden away along the streets and boulevards—a kitchen sink here, an oil burner there, a new bathroom or laundry.

The classified telephone book uncovers these sales for you, brings you and the prospect together. Bell Surveys show that more than 85% of all telephone subscribers use the classified to help them with their buying. That is where consumers look when they want to know "where to buy it."

Will these prospects find you listed there? Or will they be directed elsewhere? See that you are *adequately* represented in the next issue of the classified. Not only under all of the major products and services you sell but under the *brand names* of advertised products you carry. These listings cost only a few cents a day, yet enable you to cash in on the *national* advertising of the manufacturer.

Remember that the classified is not just another advertising medium. It is a year-round BUYERS' GUIDE that is referred to regularly. When they turn to the "yellow pages" they are really ready to buy.

Ask your local Directory Representative.

SIX WAYS TO FIGURE RADIATION

★

A Brand New Book which Solves Your Radiation Problems

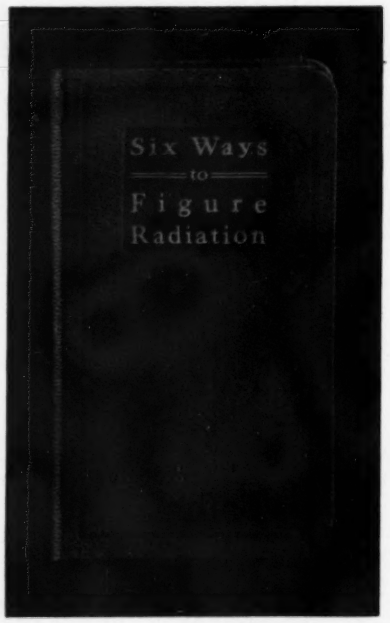
★

No longer is it necessary for you to struggle with radiation problems. No longer is it necessary for you to take chances when figuring radiation. No longer is it necessary to waste your valuable time on undependable, less accurate methods of calculating.

SIX WAYS TO FIGURE RADIATION is the answer to one of the heating man's greatest needs. This remarkable book enables you to figure, *quickly, easily* and *accurately,* the radiation for any room or building. It enables you to avoid costly miscalculations and consequent dissatisfaction on the part of your customers.

SIX WAYS TO FIGURE RADIATION is a thoroughly reliable, workable—yet simple—means of figuring radiation which you'll find indispensable in your daily work. To insure accuracy—to eliminate any element of chance—in figuring radiation, you'll want to keep this book at your fingertips—on your desk or in your pocket—ready for instant use at all times.

As its name denotes, SIX WAYS TO FIGURE RADIATION expounds the six standard, accepted methods of figuring radiation: 1. Without Tables, 2. Cubic Content Method, 3. The 2-20-200 Rule, 4. With tables, 5. The B. t. u. Method, 6. Decimal Factor Method. Each method has been thoroughly tried and tested in actual practice. Choose any one of these methods, apply it to the particular job you are figuring, and you quickly and easily arrive at the required number of square feet of radiation.



AVOID COSTLY ERRORS

Mistakes in figuring radiation are costly. If you figure wrong, one way or the other you lose. If you figure too high you lose the job and if you underestimate the radiation requirements you dissatisfy the customer. SIX WAYS TO FIGURE RADIATION helps you avoid these costly errors. This book is beautifully bound in flexible leather, consists of 64 pages and measures 3¾ x 6½ in.

★

Helps you to quickly easily and accurately figure radiation

★

Never before has the information contained in this book—information so vital to the heating man — been available from one source. Never before have these six methods been so thoroughly and clearly explained. You need this book because it facilitates one of your most difficult, disagreeable tasks . . . and you may secure your copy for only $2.00. As compared with the results obtained, the price is trivial. Send your order today. If the book does not live up to our claims, return it and your money will be refunded. Fill in the coupon, attach your check and mail today.

FILL IN COUPON AND MAIL IT TODAY

DOMESTIC ENGINEERING DE-4
BOOK DEPARTMENT, 1900 PRAIRIE AVE., CHICAGO

Please send me one copy of SIX WAYS TO FIGURE RADIATION for which I enclose $2.00. I understand that I have the privilege of returning this book if it does not live up to the claims.

Name .....

Address .....

City and State .....

Business Index—

(Continued from Page 53)

Industrial—Mechanical Draft ...	631	782	*19.3
Industrial—Natural Draft.....	230	208	10.5
Boiler Burner Units.....	294	272	8.0
Furnace Burner Units.....	44	10	340.0
Totals	4,528	3,687	22.8%

*Decrease.

AIR CONDITIONING ORDERS

Air conditioning orders are now reported by 56 manufacturers. As compared with previous releases, this report shows data for 21 additional manufacturers, of whom 8 began operations in 1934. The manufacturers included in this report produced approximately 86 per cent of the total value of the output in this industry at the census of manufacturers for 1933.

The totals for 1934 as compared with 1933 are as follows:

	1934	1933	% Increase 1934 Over 1933
Fan Group	$ 6,041,844	$4,295,756	40.6
Unit Heater Group.....	6,039,034	2,940,882	108.7
Air Washer Group.....	2,196,778	1,093,698	100.8
Total Value	$14,277,656	$8,330,336	71.4

Orders for January, 1935, as compared with January, 1934, are as follows:

	1935	1934	% Increase 1935 Over 1934
Fan Group	$ 485,105	$ 341,486	42.0
Unit Heater Group.....	527,412	303,070	74.0
Air Washer Group.....	93,412	70,972	31.4
Total Value	$1,105,929	$ 715,528	54.5

STOKER SHIPMENTS

Class 1 stokers are now reported by 84 manufacturers; class 2 by 63; and class 3 by 53. The manufacturers included in these statistics produced approximately 91 per cent of the total value of the output in the industry. This figure has been taken from the census of manufacturers for 1933.

Totals for 1934 as compared with 1933 are as follows:

	1934	1933	% Increase 1934 Over 1933
Class 1—Residential	23,214	14,212	63.3
Class 2—Apartment house and small commercial heating jobs.....	2,282	1,206	89.2
Class 3—General commercial heating and small high pressure steam plants	1,078	1,098	*1.8
Totals	26,574	16,516	60.8

January, 1935, shipments compared with January, 1934, shipments are as follows:

	1935	1934	% Increase 1935 Over 1934
Class 1—Residential	1,241	660	88.0
Class 2—Apartment	147	98	50.0
Class 3—General Commercial...	61	89	*45.9
Totals	1,449	847	71.0

*Per cent decrease—1933 to 1934.

Sponsors Radio Program on A. H. and A. C.

A radio program advertising automatic home heating and winter air conditioning was inaugurated on February 9 by Delco Appliance Corporation, subsidiary of General Motors. The corporation will sponsor "Fascinating Facts" over the Columbia Network, Saturdays from 5:45 to 6:00 P. M., EST. These broadcasts will originate in "America's Little House"—where the corporation's equipment is on display in actual operation.

The broadcasts will capitalize on the interest this better home-value project has already aroused in home building and remodeling. "America's Little House" is the model average income home built by the New York Committee for Better Homes in America and the Columbia Broadcasting System. A description of this house was published in the February issue.

Announce New Campaign for Air Conditioning

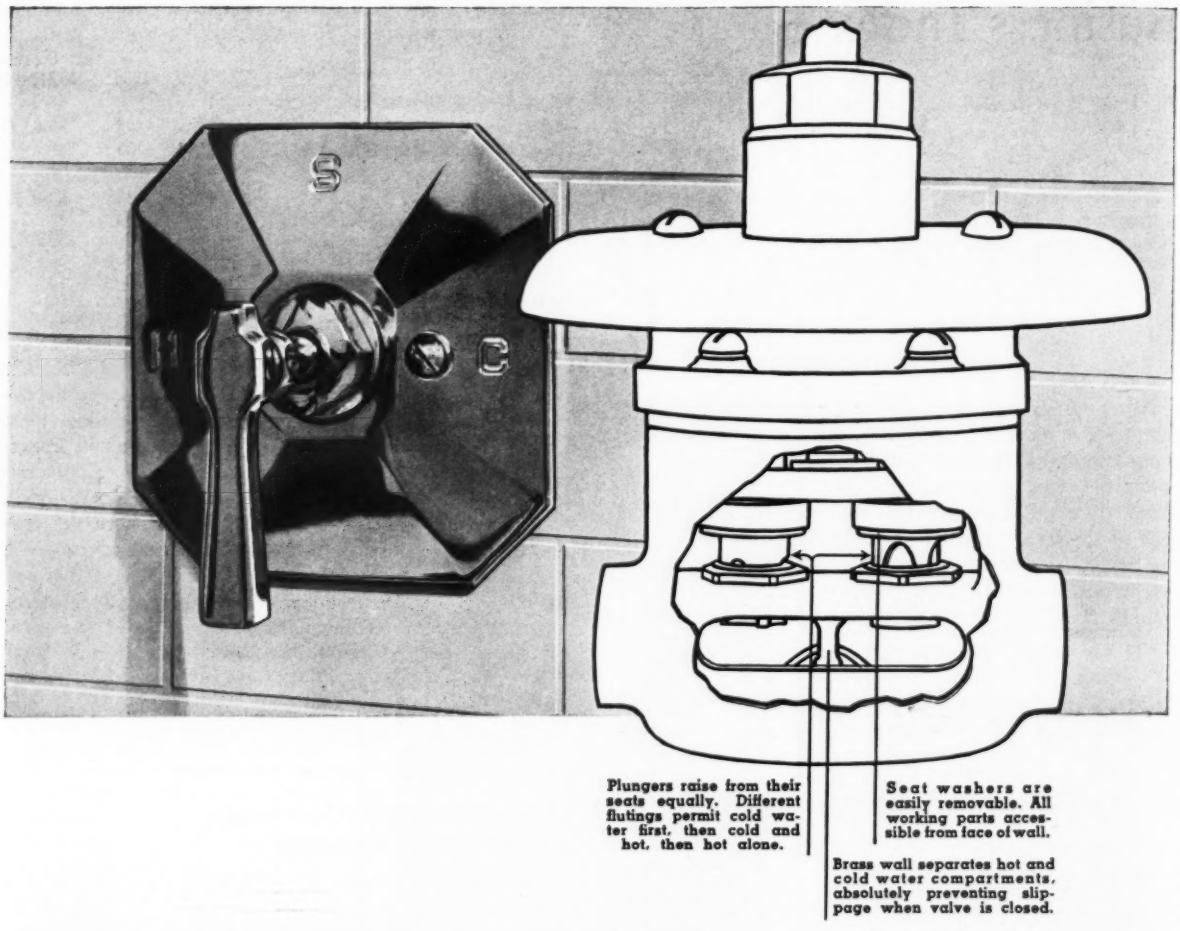
A widespread newspaper advertising campaign to promote air conditioning will be undertaken in 1935 by the General Electric Company, Schenectady, N. Y., according to A. C. Roy, advertising and sales promotion manager of the company's air conditioning division.

"The demand for air conditioning on the part of the public, particularly in restaurants, hotel dining rooms, beauty parlors and specialty shops, has increased noticeably during the past several years," Mr. Roy said. "In view of this increased interest, particularly in summer air conditioning, and the prospect for business during the coming year, we are intensifying our advertising and promotional activities."

Newspapers in approximately one hundred cities through the country will carry the General Electric air conditioning advertising which will be jointly sponsored by the company and its dealers.

J. N. Derby, Jr., Appointed Manager of N. Y. Office

J. N. Derby, Jr., vice president of The Mercoid Corporation of Chicago, has just been placed in charge of sales in the eastern territory with headquarters at the company's office at 90 West Street, New York City, succeeding Nelson J. Allaban. Mr. Derby has been identified with the industry the last fifteen years, and he has been western manager for The Mercoid Corporation for the past seven years with headquarters in San Francisco, Calif.


Plungers raise from their seats equally. Different flutings permit cold water first, then cold and hot, then hot alone.
Seat washers are easily removable. All working parts accessible from face of wall.
Brass wall separates hot and cold water compartments, absolutely preventing slippage when valve is closed.

SERVICE BEGINS BELOW THE SURFACE

AND that's where you can find your best material for sales. Appearance of plumbing fittings counts—and counts heavily. That's why Scovill offers a widely styled, up-to-date line with just the right designs for every customer's needs. But service is the biggest job of every fitting, and service is measured by construction. And that's why every Scovill fitting is at its best undressed.

The long-life, fool-proof quality construction in Scovill fittings is the kind of sales-story that turns prospects into customers—because it talks their language. Get to know the hidden points of merit—the big features of Scovill design, and then you know the key to sales. Too, a Scovill installation keeps a customer satisfied, which means he is a booster for your name.

Don't forget to explain what the Scovill mark on fittings means: sound, simple design, quality materials and construction, long life, and up-to-date designs. To get the whole story on the Scovill line, see your wholesaler, or write direct to Scovill Manufacturing Company, Plumbers' Brass Goods Division, Waterville, Connecticut.

SCOVILL S C O V I L L NRA WE DO OUR PART

Scovill Manufacturing Company, Plumbers' Brass Goods Division, Waterville, Connecticut

SCOVILL FLUSH VALVES • SHOWER, BATH AND LAVATORY FITTINGS • MISCELLANEOUS PLUMBERS' BRASS GOODS

NEWS *of the* SUPPLY FIELD

C. B. Nolte Named President of Crane Co. at Directors' Meeting

C. B. Nolte was elected president of Crane Co., Chicago, at a directors' meeting on March 26. J. B. Berryman, president since 1931 and who has been connected with the Crane organization since 1892, became chairman of the board. As chairman, he will be able to transfer his heavy responsibilities to Mr. Nolte's shoulders, and at the same time, will be in a position to follow closely the future progress of the company.

To those who do not know Mr. Nolte personally, the following brief facts

C. B. Nolte

from his record will make clear that he brings to his new position the experience, the contacts and the viewpoint so essential to the successful management of a concern with as diversified a line of products as Crane Co. manufactures and sells.

Since 1909, after receiving his Bachelor of Science degree in mechanical engineering at the University of Illinois, he has been with the Robert W. Hunt Company, consulting, testing and inspecting engineers. This concern is the largest in its field, with offices and chemical, metallurgical, concrete and physical testing laboratories in twenty-one cities in the United States and foreign countries. Successively he became division manager, manager, vice president and general manager, until his appointment in 1930 as president and general manager of the company.

His engineering background is attested to by his membership in the

J. B. Berryman

American Society of Civil Engineers, American Society of Mechanical Engineers, American Society for Testing Materials, American Railway Engineering Association, Western Society of Engineers, and Pacific Railway Club.

Eagle-Picher President Optimistic for Future

The Eagle-Picher Lead Co., Cincinnati, Ohio, is more hopeful of satisfactory operations during 1935 than it has been at any time for several years, according to A. E. Bendelari, president. In his remarks to stockholders he said in part:

"The prices of pig lead and slab zinc today are approximately $40 a ton, or 35 per cent below the past 30-year average and the present rate of consumption is 53 per cent below the average of the 5-year period, 1925-1929 inclusive. Consequently, general business conditions must necessarily show considerable improvement in order to help these markets.

"As a result of the 1934 declines our inventories are priced at low levels. A return even to the levels obtaining during 1933 following the bank holiday, will be of benefit to us in 1935. With sales in January and February showing an increase of 14 per cent over last year, we are now more hopeful of satisfactory operations than we have been at any time for several years.

"We are cooperating with the FHA and it is our hope that the activities of this organization will stimulate the consumption of all of our products especially insulation and white lead in oil."

American Radiator Makes First Profit Since 1931

Largely as a result of home modernization activity carried on under the national housing act, the American Radiator and Standard Sanitary Corp. was able to earn a profit in 1934 after having had losses in the two preceding years, according to the annual report of Clarence Woolley, chairman of the board, to stockholders. The company had a net profit last year of $1,455,227, compared with losses of $881,575 in 1933, and of $5,990,985 in 1932.

Full credit for the 1934 showing is given to modernization and repair activities by Mr. Woolley, who says in his report:

"The national housing act represents recognition of the undoubted need for a housing program in this country. It constitutes an acceptance of the fact that a revival of construction is a highly important factor in national recovery."

Awakening of national consciousness to the housing situation has been slow to materialize in this country, Mr. Woolley feels, pointing out that despite our high standard of living we are "woefully" behind other nations, notably England, France, Germany and the Scandinavian countries, in meeting this problem.

New construction in the United States declined from 1,992,000 homes built in 257 cities during the years from 1925 through 1929 to 296,000 in the five years from 1930 through 1934, the report states. In other words, the total for the latter period is less than one year's construction under normal conditions.

Construction of homes reached its lowest point last year, with 20,846

structures erected, dropping to that point from 24,557 in 1933, according to Mr. Woolley's figures.

In both years more homes were destroyed by fire than were built, he says, placing the annual fire loss at 30,000.

Confidence is expressed the company's business will be enlarged further this year, with extension of activities under the national housing act into the new construction field.

Modern Supply Co. Starts in Business in St. Louis

Modern Supply Company of St. Louis, Mo., has been incorporated with a capital of $200,000 and has started in business, occupying a new warehouse of fireproof construction with 85,000 sq. ft. of floor space, located on the main line of the Wabash Railroad with loading docks on the first and second floors. The Company's traveling salesmen cover approximately seven states. Those active in organization are: George Ellis, general manager; C. Arnold, R. Black, J. Fredericks, T. Harris, W. Jenkins, J. Jensen, D. Kenilworth N. Knox, K. Lyons, F. Mann, L. Marlin, G. Martin, H. Ryan, B. Schreiber, C. Smith, J. Tucker and H. Williams.

Jobbers in Six Cities Find Business Better

Chicago and Atlanta have tied for first place in an encouraging report on business conditions in six major markets and jobbing centers completed recently for *Advertising Age* by Ross-Federal Service, Inc. The plumbing and building supply field showed the greatest improvement in business, according to the findings of the survey.

The research organization interviewed 246 leading jobbers in six mercantile fields. In these six cities, 61 per cent of the wholesalers reported that business was improved, the survey revealed. Wholesale outlets investigated were classified under foods, tobacco, drugs, paint and varnish, electrical equipment, and plumbing and building supplies.

All types of outlets in Chicago and Atlanta which reported that their level of business activity had improved over that of a year ago gave percentages which average 19. The average increase reported by Minneapolis jobbers was 16.5 per cent; San Francisco, 16 per cent; New York, 14 per cent, and St. Louis, 8.6 per cent.

The greatest improvement was registered in the plumbing and building supply field with an average increase of 21 per cent, the determination of the average as in foregoing instances, including only those jobbers reporting on improvement. The figure for paint and varnish was 15.9 per cent; drugs, 14.8 per cent; electric equipment, 14.6 per cent; food, 14 per cent and tobacco, 11.5 per cent.

Business was least spotty in San Francisco, according to the research organization's report. Of the 246 wholesalers interviewed in the six cities, an improvement was reported by 60.98 per cent; a decline in volume by 8.54 per cent; and no change by 30.48 per cent. of these wholesalers.

Appoints New Agent

The Fedders Manufacturing Company, Buffalo, N. Y., has announced the appointment of Emerson Swan, Goodyer Co., 110 Arlington Street, Boston, Mass., as its New England representative.

Metropolitan Plumbing Supply Jobbers Hold Second Annual Dinner-Dance

The Metropolitan Plumbing Supply Jobbers Association, Inc., held its second annual dinner-dance in the Grand Ballroom of the Hotel New Yorker, New York City, on Saturday, March 9. Approximately 500 members and guests were in attendance, representing wholesalers, manufacturers, city officials, public utilities and the trade press.

The officers of the association as well as the committee members were on the job the entire evening and saw to it that every guest received careful attention.

An excellent dinner was served, and the guests were entertained by high-class artists from various theaters.

The dancing was most delightful, owing to the fact it was accompanied by music from an excellent orchestra.

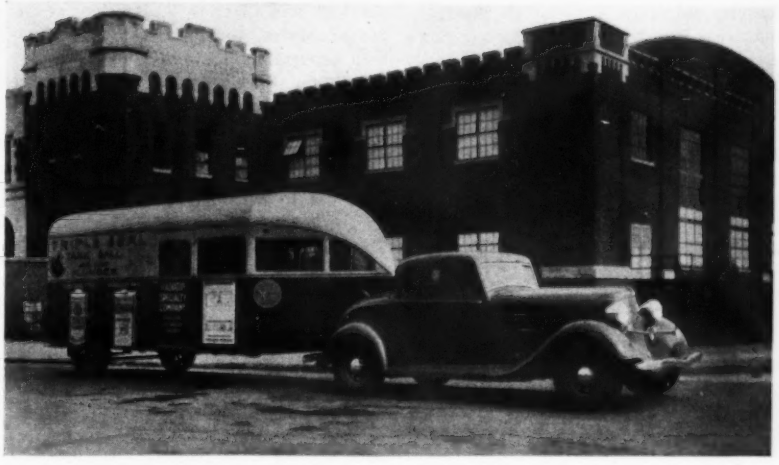
The officers and the directors of the Association are: President, Michael W. Tomback; vice president, Daniel Gottlieb; treasurer, Benjamin Meyers; secretary and counsel, Solomon Napolsky. Board of directors: Irving Bellock, Julius Bleiberg, B. Finkel, Arthur Ginsberg, Joseph Gordon, Daniel Gottlieb, N. Haft, Samuel Heller, Emil H. Lehman, Sigmund Lieb, Joseph Mason, Benjamin Meyers, Solomon Napolsky, Franklin E. Pogul, Henry Sheiner, Henry H. Somers, Michael W. Tombach, and Aron Zellermeier.

Picture taken at annual dinner-dance of Metropolitan Supply Jobbers

Manufacturer's Display Cars to Visit Many Cities

The accompanying photograph shows the flagship of a fleet of streamlined display cars which the Radiator Specialty Company, Charlotte, N. C., is putting into service throughout the United States. This particular sales coach has already been seen on the streets of Louisville, Memphis, New Orleans and other southern cities. It is now on the way to Los Angeles where the company's plants for manufacturing tank balls and washers are located.

The advertising display car, in charge of W. L. Dean, contains electric demonstrators and merchandising helps for the dealer and jobber's salesman. Large crowds gather wherever the display car parks and a keen interest in the merchandising idea is shown by the trade.



This is one of the display cars being placed in service by Radiator Specialty Co., Charlotte, N. C.

Brass Manufacturers Will Study Code Rules

The Sanitary Brass Manufacturers' Association met recently in Cleveland, Ohio, and elected the following officers for the ensuing year: Otto Hitchcock, president; E. A. Eckhouse, vice president; A. V. Gemmill, treasurer; and J. S. Regan and A. G. Zibell, executive committeemen.

A committee of five was appointed by the chairman, Mr. Hitchcock, to review Articles VII and VIII of the Code and take from it such rules as the committee feels would make a good set of business ethics.

"The brass industry simply followed the action of other groups under our code (except range boilers) in requesting elimination of Articles VII and VIII because they were not complied with or enforced by NRA," says R. Kennedy Hanson, commissioner, in commenting on the meeting.

Appointed Distributor in Chicago Territory

The Sands Manufacturing Company of Cleveland, Ohio, has just announced the appointment of the Automatic Water Heater Sales Company, 217 North Wells Street, Chicago, as the exclusive distributor for the products of the Sands Mfg. Co. in Chicago and adjacent territory. John R. Bly, the president of the Automatic Water Heater Sales Company, has had a wide experience in the automatic gas water heater business, having started in 1907 with the Pittsburg Water Heater Company, and he was continuously associated with that company until recently. He was sales manager for the Pittsburgh territory until 1924, when he was elected vice president, a position he held until 1928, when he resigned to act as distributor for the Pittsburg Water Heater Company in Chicago and Middle West territory, an arrangement which was terminated recently.

Represents Manufacturers

Clyde H. Miller Associates, 726 Jackson Place N. W., Washington, D. C., have been appointed sales representatives for the following manufacturers in Washington, D. C., nearby Maryland and Virginia: Burnham Boiler Corp., Irvington, N. Y.; Radiant Steel Products Co., Williamsport, Pa., and Rome Radiation Co., division of Revere Copper and Brass, Inc., Rome, N. Y.

Opens New Branch in Astoria, Long Island

The Pomeroy Plumbing Suppply, Inc., of 3332 103rd Street, Corona, Long Island, N. Y., has opened a new branch store at 3713 Thirty-first Avenue, Astoria, Long Island, N. Y. The new branch is in charge of Samuel Eischenbaum, formerly president of Passaic Plumbing Supply Co., of Passaic, N. J.

Black & Decker Mfg. Co. Declares Dividend

The board of directors of the Black & Decker Manufacturing Company of Towson, Md., has declared a regular current quarterly dividend of 2 per cent or 50 cents per share of the preferred stock, payable March 30th to stockholders of record on March 18th. This is the first dividend to be paid by the Company since June 30, 1931. Preferred dividends aggregating $7.00 per share having accumulated since that date. It has been the Company's policy since paying off all bank indebtedness, October 1, 1934, to build a strong cash reserve, and this policy will be continued. The Company's sales for the first four months of the present fiscal year exceeded those of the same period of last year by 30½ per cent.

Now in New Locations

Spang, Chalfant & Company, Inc., and the Dayton Pipe Coupling Division of National Superior Company have moved their plant in Boston, Mass., to the Consolidated Building, 250 Stuart Street.

The Copper & Brass Research Association has announced that its office will be moved from 25 Broadway to 420 Lexington Avenue, New York City. The transfer will take place on April 1st.

Maine Salesmen Elect Officers at Meeting

The Plumbing, Steam and Metal Salesmen's Association of Maine held its twenty-eighth annual meeting and dinner at the Lafayette Hotel, Portland, on March 11. A business meeting was held in the afternoon, followed by dinner and entertainment.

The following officers were elected for the coming year: President, Percy A. Quimby, Smith & Abbott Co., Portland; first vice president, William J. Moore, Geo. E. Trudel Co., Manchester, N. H.; second vice president, Randall K. Austin; third vice president, Harold Beard;

financial secretary, Clayton H. Prouty; treasurer, Frank S. Billings; recording secretary, Fred G. Hall.

The following new members were elected: Larry Lasher and P. W. Gibson, both of Anderson Mfg. Co., Cambridge, Mass.; Arthur L. Hinman, Crane Co., Portland, Me.; S. S. Brown, Carman-Thompson Co., Lewiston, Me.; Fred A. Hall, Hall & Knight Hardware Co., Lewiston; Charles E. Kelly, General Heating and Appliance Co., Boston, Mass.; and Philip Faherty, Somerville Iron Works.

Leighton Supply Co. Holds Annual Sales Convention

The salesmen of the Leighton Supply Company of Fort Dodge, Iowa, attended a four-day annual sales conference in that city in the middle of March and absorbed a large amount of information from the various factory representatives from all parts of the country, who were in attendance. Among these representatives were: F. L. Frensdorf of F. E. Myers & Bro. Co., Ashland, Ohio; Tracy Johnson of The Trane Company, La Crosse, Wis.; Millis Miller of L. J. Mueller Furnace Co., Madison, Wis.; Wm. S. Hilton, Kohler Co., Kohler, Wis.; A. L. Biersmith, Columbian Steel Tank Co., Kansas City, Mo.; R. J. Alshouse, Continental Steel Corporation, Kokomo, Ind., and Jas. A. McDonnell, Weil-McLain Co., Chicago.

Jenkins Bros. League Holds Ninth Annual Dinner

Farnham Yardley, president of Jenkins Brothers, Bridgeport, Conn., was present at the ninth annual dinner of the Jenkins Brothers Veteran's League and presented medals and bars to 50 members who have been associated with his company for 25 years or more.

Four feminine members of the league were given awards and a holiday and a purse to properly celebrate the occasion. These ladies are: Katherine A. Webb, 45 years service; Elizabeth J. Mole, 35 years service; Elizabeth Cullen, 30 years service; and Katherine Kelley, 25 years service.

The ninth annual dinner was held at the Stratfield Hotel in Bridgeport, and Bernard J. Lee, vice president, acted as toastmaster. Mr. Lee introduced President Yardley, and for one minute the entire gathering stood in silence to honor those members of the league who passed away during 1934. They were: Charles J. Ketchum, after 26 years service; Charles S. Bunce, 40 years service; Walter E. E. Smith, 42 years service; John Blasczyk, 32 years service; and Charles V. Barrington, 38 years service, formerly vice president and general manager.

William B. Lockwood, who retired from active work after 50 years with the company, was awarded a bar for 55 years of membership in league. Bars for 45 years membership were awarded to Franklin A. Bennett, John Dirgo, John T. Sullivan and Frank L. Schubert; forty year bars to D. J. Judge, M. J. Delmar, Morris I. Nichols and James J. Cassidy; Thirty-five year bars to Emil Wehger, William E. Osborne, Michael Pickett, Harley Chase, Herbert Kennedy.

Thirty year bars were presented to Joseph Schultz, Albert Mussler, Ernest Metcalf, Henry Ruzbarski, John Conway, T. J. Cavanaugh and Arthur Schmidlin.

Medals for 25 years service went to Warde Hungerford, J. A. Bown, Michael P. O'Mahony, Joseph Barrett, Christopher O'Brien, Bernard J. Lee, James Aurigemma, Charles F. Kacer, Joseph Mager, Ogden G. Willey, William J. Murray, Patrick Buckley, Andrew Sedlak, Walter Kitra, John Kosztyu, Samuel Bogin, John Lomperta, Charles Lynch, John J. Malone and Martin Pretkiewicz.

Other members come in between 25 and 50 years and are eligible for awards at the various milestones in future years. Among the best known of these are John E. Lyddy, who will receive his 50-year membership bar at the next annual dinner, and Benjamin J. Reilly, who will get a 45-year bar. George T. Ellsworth will also be ready for his 40-year award at the dinner to be given next year.

Reading Iron Company Holds Sales Meeting

Reading Iron Company of Reading, Pa., recently held a general sales meeting, the first since 1931, and it was most successful in every respect. W. S. Shiffer, general manager of sales, presided at the meeting and created much enthusiasm with the announcement that the company has formed a commercial research department, composed of skilled technicians, whose advisory services are available free.

Texas Wholesalers Hold Second Quarterly Meeting in San Antonio

The Wholesale Distributors Association of Texas held its second quarterly general meeting at the Plaza Hotel, San Antonio, on March 15 and 16. The meeting was attended by nearly one hundred per cent of the membership, together with a number of invited guests.

An executive meeting of the board of directors preceded the general meeting of the association. At the general meeting, C. G. Singleon, of N. O. Nelson Mfg. Co., Dallas, president of the association, outlined the organization's program.

One of the most important divisional meetings was that of the pipe, valve and fittings division. The various committees rendered their reports on the matter of a spread on pipe prices designed to give protection to retail dealers who carry a stock of pipe.

The committee that has been working on the problem of cuts and threads also rendered a report to this division.

The pipe, valve and fittings division requested the pipe mills to investigate the qualifications of each jobber who had signed the jobber's agreement, under regulation No. 7. It was the consensus that many retailers had qualified under the pipe code as jobbers. A vote of thanks was extended to the pipe mills for their assistance in helping to stabilize the pipe market.

Valves and fittings came in for considerable discussion. It was pointed out by several of those present that the cost of handling and stocking valves and fittings is high and that these items should carry a larger percentage of profit for jobbers than other products with a smaller overhead.

The plumbing and heating division of the association discussed several matters of importance which were tabled pending the report of various committees at the June meeting. It was the consensus of those present that plumbing and heating materials should not be delivered to other than jobbing points, inasmuch as such delivery costs were not accounted for in their set-up.

At the session March 16, Jack Dale of Briggs-Weaver Machinery Company, Dallas, explained the purpose of the Sales Manager's Club and invited sales managers in the Southwestern states to attend the convention which will be held in Dallas on April 12.

The board of directors announced that the association would accept the invitation of the Houston wholesalers to meet in that city for the June convention. The exact date will be set by the executive committee.

The WISE CHOICE!

• • • *in the specification of pipe*

What kind of service will it give when installed and how long will it last, are the two main points the wise buyer considers in his choice of pipe. To give the ultimate in performance, pipe must be clean and smooth, inside and outside; that is, it must be free from mill-scale. Such scale causes corrosion and contributes to deterioration in the pipe line. NATIONAL Scale Free Pipe, therefore, is a wise choice. It is made by a special Scale Free Process, applied to butt-weld sizes ½ to 3-inch. Here are the outstanding advantages of this clean, smooth pipe—

Minimized corrosion—particularly pitting—Clean, smooth surfaces, inside and outside—Full delivery capacity—less friction loss—No damage to valve seats; no clogging of small orifices—Greater strength at the weld.

When you order standard pipe for any purpose, be sure to specify NATIONAL Scale Free and secure the maximum in performance and economy. Large use by discriminating buyers, continued through many years, has made it—*America's Standard Wrought Pipe.*

CHROMATE TREATMENT—*All National Galvanized Pipe is given a special chromate treatment to resist discoloration and the formation of white rust. This patented process preserves that smooth, glistening surface or metallic lustre which is characteristic of good galvanizing.*

NATIONAL TUBE COMPANY · Pittsburgh, Pa.

Pacific Coast Distributors—COLUMBIA STEEL CO., San Francisco, Calif.
Export Distributors—UNITED STATES STEEL PRODUCTS CO., New York, N. Y.

United States Steel Corporation Subsidiary

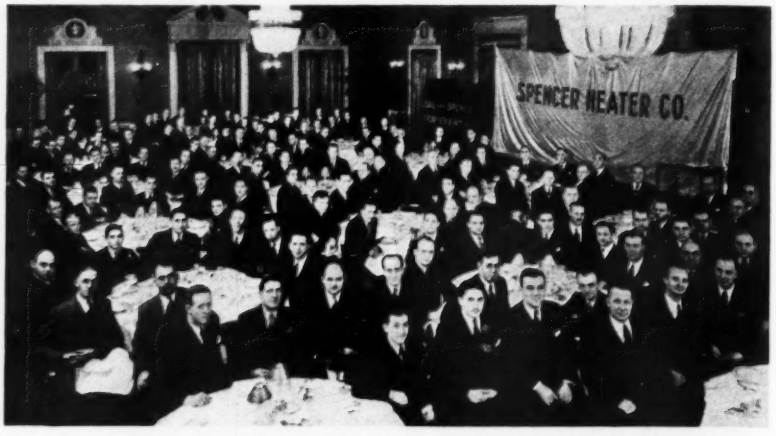
NATIONAL SCALE FREE PIPE
SPELLERIZED

Spencer Distributors Meet in New York City

An important dinner meeting of the Metropolitan Distributors of the Spencer Heater Company was held Wednesday evening, March 6, at the Commodore Hotel, New York City, to announce Spencer's new sales and advertising drive.

More than 150 executives and members of the sales forces attended from Saltser & Weinsier, Inc., Daniel Morris Co., Inc., Sam S. Glauber, Inc., W. A. Case & Son Mfg. Co., J. D. Johnson Co., Inc., Sanitary Plumbing Supply Co., W. V. Egbert & Co., Inc., and the Ral Plumbing Supply Co.

Officials of the Spencer Heater Company discussed the new program back of the company's line of heaters, which includes a comprehensive newspaper schedule in seventy-six cities, direct mail, material for a heating contractor's campaign, as well as a special new display proposition.



Picture taken at dinner meeting of Spencer Heater Co. distributors, held in New York City

American Radiator Co. Consolidates Two Branches

The New York City and Long Island, N. Y., branches of American Radiator Co. have been consolidated, with W. H. Emory, formerly in charge of the Long Island branch, as manager of the combined branch.

J. B. Beirn, formerly in charge of the company's branch at Reading, Pa., which has been consolidated with the Philadelphia office, has been named assistant manager of the combined New York City and Long Island branches. D. M. Forgan, formerly manager of the New York City branch, has been transferred to executive sales activities.

Crane Co. Reports Profit; First Time Since 1930

Operations of Crane Co., Chicago, last year resulted in net income of $1,021,543, the first year in which the concern has operated at a profit since 1930, when net totaled $2,734,406. This was revealed in the annual report, submitted to stockholders recently by John B. Berryman, president.

Last year's net is equal to 39 cents a share on 2,348,628 shares of $25 par common stock outstanding, after provision for charges, taxes and preferred dividends. In 1933 net loss amounted to $1,874,823.

While sales showed an increase of 33 per cent for the year they were still subnormal, Mr. Berryman said, and not more than 40 per cent of the volume for which the company has manufacturing and distributing facilities. He added that sales in Canada and England increased by a larger percentage than domestic volume.

"Considering the restricted demand for all our products," he continued, "unprofitable prices for plumbing fixture inventories and an increase in operating costs attributable to NRA, the result of the year's work is very encouraging. There is a fairly good prospect for increased business in repairs and new construction for 1935."

The report contains a chart showing home construction in the United States for the last ten years. The peak was reached in 1928 when value of construction was $2,800,000,000. This gradually declined to $248,000,000 in 1934.

Mr. Berryman said an increase was recorded in the last half of 1934 in the demand for plumbing and heating materials but because of price demoralization profits were not affected.

W. A. Neill Joins Worthington

The Worthington Pump and Machinery Corporation of Harrison, N. J., has consolidated several of its contributing sales divisions into one mining and construction department, under the management of W. A. Neill, with headquarters at its general offices in Harrison, N. J.

Mr. Neill was educated at Leland Stanford University, and for several years was connected with the Denver Engineering Works Company of Denver in various capacities. Later he was with Allis-Chalmers Company of Milwaukee, and in 1916 became a member of the Dorr Company, Inc., of New York City.

In his new position Mr. Neill will have a competent staff of sales engineers under his direction.

Calnan Urges M. W. C. Support

(Continued from Page 52)

I should like to have every member of the National Association of Master Plumbers realize and appreciate the sacrifice which manufacturers are making in order to give us these low prices. It means that they are going deep down into their own pockets—drawing on their capital—to wage this battle of distribution. They are making a tremendous financial contribution. It is a battle for existence for them, and also for us.

When I say battle for existence, I mean this literally. It is the truth. It is a battle for survival, and I want every member of the National Association of Master Plumbers to show the world that we are standing side by side with our friends in this battle.

The manufacturer, by sacrificing his profits on staple items of enamelware, pottery and brass, is making it possible for the master plumber to stay in the economic picture as an independent operator.

By their advertising, these manufacturers are helping to re-establish the master plumber in the mind of the public as the only reliable source of materials and as the only man to whom a plumbing installation can safely be entrusted.

Need I in conclusion say anything more than simply this: The future of the master plumber as an independent business man is entirely up to us. Our actions in the next few months will greatly influence our economic future.

Let us act accordingly. Let us join hands with the friendly and co-operating wholesalers and manufacturers and together establish in the minds of all Americans the true value of worthy products properly installed.

In a Personal Way

M. W. Dennison, Boston, Mass, president of the New England Wholesalers Association, and Mrs. Dennison, drove recently to Florida where they boarded the *S. S. Lafayette* for a cruise of several weeks to the Windward Islands and South America.

Arthur L. Hinman has been appointed manager of the Portland, Maine, branch of Crane Co., succeeding **George W. Paul.** Mr. Hinman was formerly connected with the company's branch at Providence, R. I. Mr. Paul, who retired from active business on March 1, had been associated with Crane Company's Portland branch for twenty-seven years.

L. E. Pelletier has been appointed assistant sales manager for W. A. Russell & Company, Grand Central Terminal Building, New York City. Mr. Pelletier has been identified with

L. E. Pelletier

the heating industry for the last twelve years, and was formerly connected with the firm of Agnew, Pelletier & Tomlinson.

John W. Moore has been appointed representative of the Pittsburgh Tube Co., Pittsburgh, Pa., in the Chicago territory. Mr. Moore's headquarters are at 505 North Michigan Avenue, Chicago.

J. E. Lamping has been appointed manager of the Cleveland branch of the American Radiator Company of New York City, succeeding L. O. Stearns, who has been transferred to the Company's sales headquarters in New York City. Mr. Lamping has been with the American Radiator Company since 1907, having been connected with the Cincinnati branch of the Company from that year until 1916, when he was transferred to Cleveland as chief clerk of the latter branch. Since 1928 he has been doing sales work in Cleveland.

P. A. Peterson, who has been connected with the Leighton Supply Company of Fort Dodge, Iowa, for the last 22 years, has been appointed representative in the southeastern territory to succeed Mr. Altum, who recently resigned on account of his health.

G. C. Mahaffey, known among his friends in the trade as "Cliff" Mahaffey, has joined the Hays Manufacturing Co., Erie, Pa., as the company's direct representative in Chicago and adjacent territory. Mr. Mahaffey was formerly representative in Chicago for Halsey W. Taylor Co., Warren, Ohio.

H. E. Robertson has just become associated with the Chicago office of the Youngstown Sheet & Tube Company of Youngstown, Ohio. Mr. Robertson was formerly connected with the Watrous Company of Chicago. This association was terminated by the recent death of Mr. Watrous. Previous to this, Mr. Robertson was president of the H. E. Robertson Company, manufacturers of plumbers' brass goods.

S. H. Blackwood, formerly assistant district sales representative for the Reading Iron Company, Reading, Pa., in the New York territory, has been appointed district sales representative in the Southern territory with headquarters in the Continental Building, Baltimore, Md., according to **W. S. Shiffer,** general manager of sales. Mr. Blackwood takes the position held for many years by **W. J. White,** who recently resigned.

W. N. Johnson has been appointed salesman in the New York territory for the Reading Iron Company, Reading, Pennsylvania.

Edward S. Erickson, formerly vice president in charge of production and research for Mullin Manufacturing Company at Salem, Ohio, is now associated with the Young Radiator Company at Racine, Wis., Mr. Erickson has had many years of experience in the automotive and other industrial fields.

J. L. Campbell has been appointed director of sales education for the American Radiator Co., New York City, and **J. H. Roberts** has been placed in charge of copper pipe and fittings sales under the newly formed allied products division of the company.

R. F. L'Holte, assistant general manager of sales, American Radiator Co., New York City, has been appointed manager of the newly created allied products division of the company. The purpose of this division is to increase the company's service to contractors on specialty and other new products placed on the market in recent years. Mr. L'Holte has been connected with the American Radiator Co. since 1910.

Russell Kneedler has been appointed representative in the Metropolitan, Philadelphia and Eastern Pennsylvania territory for Nye Tool & Machine Works, Chicago. Mr. Kneedler formerly represented this company in the same territory.

Obituaries

Harry E. Coe

Harry E. Coe, Connecticut representative for Sloan Valve Company, Chicago, died March 9. Mr. Coe, who had been ill for more than a year, had been associated with the Sloan Valve Company for many years.

Dwight Porter

Dwight Porter, Malden, Mass., professor of hydraulic and sanitary engineering at the Massachusetts Institute of Technology prior to his retirement in 1922, died February 26.

Ralph H. Clore

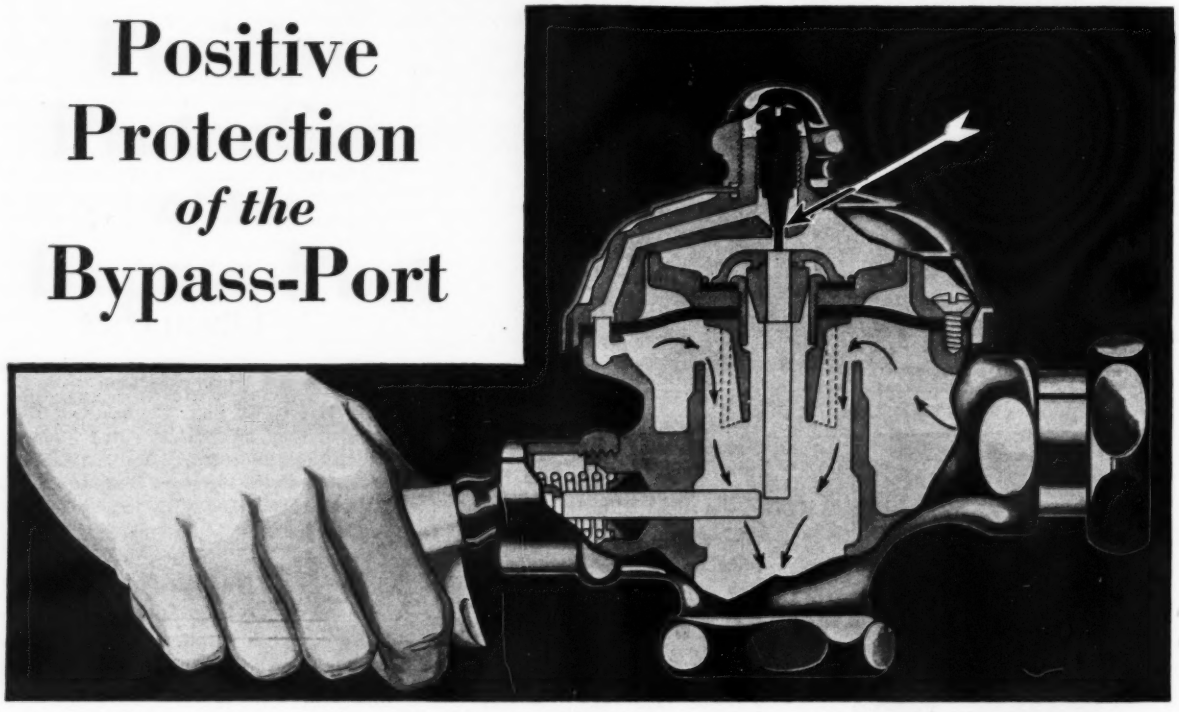
Ralph H. Clore, general sales manager of the Medart Company of St. Louis, Mo., died at his home in that city on Wednesday afternoon, March 6th, according to announcement issued by E. J. Baur, secretary-treasurer of this concern.

William H. Goodwin

William H. Goodwin, president of The Smith & Abbott Company, Portland, Me., died on March 12 after an extended illness. Mr. Goodwin would have been eighty-five years of age on March 29. He was a native of Augusta, Me., but located in Boston, Mass., at an early age, and had been connected with the wholesale distribution of plumbing and heating supplies in New England for more than sixty years, the last thirty of which were spent in Portland. Always a firm believer in association work for the betterment of the industry, Mr. Goodwin was a ceaseless worker in its behalf.

Trouble-free Performance

Positive Protection *of the* Bypass-Port



THE thorough cleansing of the bypass from any substance that might clog the opening and interfere with regular action is assured in all

Watrous FLUSH VALVES

In the Majestic valve, shown above, the plunger is raised off its seat at every flush, so that the orifice is never allowed to get smaller through corrosion or foreign matter which might lengthen the flush and cause water-waste.

High or Low Pressure

Another assurance of accurately measured flushing is the extra-large diaphragm area—25 per cent over that of the average diaphragm valve; the shut-off mechanism functions effectively even under low-pressure conditions. This is an important factor on the upper floors of tall buildings.

A Full Waterway

As shown in the illustration, all available volume of water is delivered by the Majestic valve. In the Watrous piston types also, a full waterway is assured by the complete travel of the piston, providing the necessary "punch" for a thorough flush.

WATROUS IMPERIAL FLUSH VALVE

One of the Watrous piston types, the Imperial, shown on the right, is a good example of this free and effective flow, due to complete piston-travel. Providing ample volume without waste, it is very economical in operation; the non-hold-open feature limits the flow to the length determined by adjustment, no matter how long the handle is held.

Order from your jobber
—write also for catalog No. 433

IMPERIAL BRASS MFG. CO.

1231 West Harrison St., CHICAGO

NEWS *of the* TRADE

N.A.M.P. Convention Plans Develop; Big Attendance Expected

Plans are developing rapidly for the 53rd annual convention of the National Association of Master Plumbers which is to be held at the Stevens Hotel, Chicago, June 24 to 27. One of the newest developments is the appointment by National President John J. Calnan, Chicago, of the three divisional committees, representing master plumbers, manufacturers and wholesalers, to assist in arranging for the convention. The complete personnel of these three committees is given on page 104 in this issue.

In selecting the Stevens Hotel as the convention and exposition headquarters, surroundings unparalleled in previous conventions are made available. The Stevens is the largest hotel in the world, with 3,000 outside rooms and 3,000 baths. This tremendous capacity assures delegates and their guests of accommodations ranging from the most simple to the elaborate.

The convention sessions will be held in the largest ballroom in the world, with 1,500 square feet of floor space and a balcony eight feet wide running around the room. Approximately 4,000 persons can be seated in this commodious room without crowding. The ballroom is equipped with a modern amplifying system.

It would be premature to give the entertainment features which have been planned, because, after all, the entertainment is merely an accessory to the more important convention proceedings themselves. Suffice it to say that for individuality and diversity of features, the Chicago convention will be outstanding.

The usual special arrangements with transportation companies will be made this year, as in the past, and it is urged that members and local associations start planning now to arrange parties to attend the convention.

Albany Celebrates Its Golden Anniversary

The Master Plumbers Association of Albany, N. Y., celebrated its golden anniversary with a dinner and dance on the evening of March 9. The affair was held at Wolfert's Roost Country Club.

An attractive souvenir program was prepared for the occasion. This contained a photograph of the first president of the Albany association, the late Allan Gilmour, and also a photograph of the present president, Edward J. Daly. The program also contained an interesting sketch of the association's history from its founding in 1885.

The toastmaster of the evening was Peter Rubenstein, vice president of the association.

Among those who spoke at the dinner were the following: President Daly; Leo M. Doody, commission of public welfare; James J. Nolan, judge of the children's court; Joseph J. Casey, assistant district attorney; Sol Rubenstein, judge of the recorder's court; John E. Dugan, past state president; Joseph O. Stapf, vice president of the New York State Association of Master Plumbers, and William E. Foley, president of the New York State Association of Master Plumbers.

Invited to Be Guest of N. A. M. P. at Convention

Alexander W. Murray of Twin Falls, Idaho, the only surviving charter member of the National Association of Master Plumbers, has been extended a personal invitation from the President of the National Association, John J. Calnan, Chicago, to attend the association's 53rd annual convention to be held in Chicago, June 25, 26 and 27, as a guest of the National organization.

Mr. Murray who is now in his 87th year, was one of the pioneers in organizing the Plumbing Contractors' Association of Chicago in 1883 and was also active in the formation of the National Association in the same year. In his letter President Calnan stated that the invitation was being extended in recognition of Mr. Murray's past service in helping to organize the association as a charter member of the National and also a charter and honorary member of the Chicago plumbers' association.

Mr. Murray, who has made his home in Idaho for a number of years, was also the guest of the National Association on the occasion of its golden anniversary at New York City three years ago.

Tennessee Sets Date for 1935 Convention

The Associated Master Plumbers of Tennessee will hold their annual convention at Nashville on May 20, according to Gustav Limberg, president of the association. The hotel which is to serve as headquarters had not been definitely decided upon at the time this was written.

Maryland Masters Elect Officers for 1935 Term

The Association of Master Plumbers of the State of Maryland, Inc., met on March 14 and unanimously reelected Gustave G. Wirth as president of the association. This was in recognition of his efficient work during the past four years. Mr. Wirth is also state code executive.

Other officers for the coming term are: John M. Frederick, first vice president; William A. Imbach, second vice president; Frank F. Breyer, treasurer; Thomas J. Thaler, recording secretary, and Chester R. Weaver, sergeant-at-arms. The members of the board of directors are: Frank Knell, chairman, Samuel Houck, Francis Dorsey, August Malthan and William Mylander.

The meeting was attended by master plumbers from all sections of the state.

Kentucky Announces Convention Dates

The Kentucky State Association of Master Plumbers will hold its annual convention at Lexington, May 13 and 14, according to O. H. Mitzlaff of Louisville, secretary-treasurer of the association. Convention headquarters will be at the Phoenix Hotel. Albert D. Burger, Louisville, is state president, and John E. Kennedy, Covington, vice president.

Plans Progress for H. P. and A. C. C. Convention

Arrangements are fast nearing completion for the forty-sixth annual convention of the Heating, Piping and Air Conditioning Contractors National Association, which will be held in Cincinnati, Ohio, May 20, 21 and 22. Convention headquarters will be at the Hotel Gibson. Manufacturers and nonmembers are cordially invited to attend the sessions.

A full program of important addresses by authorities on their respective subjects and reports of officers and committees, has been planned. The local convention committee is making elaborate plans for the entertainment of members and guests.

Plans have been completed with the railroad passenger associations for a new, heretofore unused plan which assures every member attending the convention fare and one-third for the round trip. It is expected that a large delegation from all parts of the country will assemble at Cincinnati.

Michigan Plumbers Will Meet April 9 and 10

The Michigan Master Plumbers' Association will hold its annual convention at Flint, on April 9 and 10, with headquarters at the Durant Hotel, according to F. B. Lent, of Saginaw, president of the state association. Howard Reed, Jackson, is secretary-treasurer of the state association, and Fred C. Strumer, Jackson, is vice president.

Alabama Master Plumbers Will Meet in Birmingham

The fifty-third annual convention of the Alabama Association of Master Plumbers will be held in Birmingham, Ala., April 8, according to announcement by Joseph W. Pate of Birmingham, president of the association.

At the convention last year in Montgomery, the association selected Selma for the meeting place this year, but this was changed recently by the executive committee in the interest of a larger attendance.

Building Permits Gain in Chicago Territory

According to the records of the Building Department of the City of Chicago, there was a substantial increase in the value of building permits for the week ending March 16, in comparison with the corresponding week last year. The total number of permits for the week were eleven, at a cost of $532,750, while for the same week in 1934 the number of permits was four, amounting to $7,700.

There has also been an encouraging increase in suburban building figures during the month of February as compared with the same month last year. The total permits for February amounted to $306,940 or a gain of 28 per cent over February, 1934. Evanston was the most active in new building during February. Other suburbs reporting substantial increases were Highland Park, Gary and Hamond.

Masters of the Oranges and Maplewood Entertain Leaders

The Master Plumbers' Association of the Oranges and Maplewood, N. J., held its regular monthly meeting on Wednesday evening, March 20, but it was of more than usual interest owing to the fact that many of the leaders in the industry were in attendance.

The board of directors of the New Jersey State Association of Master Plumbers held a meeting in the Orange association rooms in the afternoon and many of the directors remained to attend the meeting of the local association.

President Raymond Bocca introduced the following visitors: National Director George H. Werner, Past State President George L. Bird, State President Edmund P. Ingram, First State Vice President George McVoy, Fourth State Vice President George Brenner; Albert Ruhl, vice president of Newark Association; Ira Morris, secretary of Newark Association; Past President Nick Triani and President Fred Baker of North Hudson Association; Les Wake, State field man, and John R. Lewis of DOMESTIC ENGINEERING.

President Ingram gave an interesting and instructive talk on F. H. A., and National Director called attention to the coming State and National conventions.

Following the meeting, refreshments were served, and members and guests enjoyed a social hour.

New Bedford Masters Elect New Officers

The Master Plumbers Association of New Bedford and Vicinity, Inc., has elected the following officers for the ensuing year: President, Ernest Margeson, New Bedford; vice president, James F. Murphy, New Bedford; secretary, Walter P. Bailey, New Bedford; treasurer, Richard T. Thatcher, Fairhaven. These men, together with Herbert C. Reynolds, constitute the board of directors of the association.

President Calnan Names Convention Committees

John J. Calnan of Chicago, president of the National Association of Master Plumbers, has just announced the appointment of three divisional committees which will function in connection with the 53rd annual convention and the Chicago Exposition of Plumbing, Heating and Allied Products, as follows:

Master Plumbers Divisional Committee: Rupert J. Weber, chairman; John A. Corboy, Robert E. Murphy, Jas. C. Naughton, Henry O'Callaghan, William F. Powers and Henry P. Reger.

Manufacturers Divisional Committee: Charles R. Crane, II, chairman; Wm. E. Clow, Sr., Jos. J. Crotty, Walter J. Kohler, Charles B. Nash, H. M. Reed, W. L. Schaeffer.

Wholesalers Divisional Committee: Jos. F. Carroll, chairman; Charles Barrows, Marshall Davies, Thomas Floro, W. J. Spillane, Ben Weil and H. C. Yelton.

Mid-West Master Plumbers Meet at Elk City

The Mid-West Association of Master Plumbers recently held a most successful meeting at the Stoney Hotel in Elk City, Okla. Fifty master plumbers were in attendance. An elaborate dinner was served. This group has recently issued a song book, and some of its songs were tried out at this meeting with great success led by a trio of young ladies, all daughters of master plumbers. Plans for the state convention were discussed.

Chicago Masters Hear Talks by FHA Leaders

Instruction meetings were held under the auspices of the Federal Housing Administration in the grand ball room of the Palmer House, Chicago, on March 18, 19 and 20, at which methods of better cooperation and better selling by members of the building industry were discussed.

The Plumbing Contractors' Association of Chicago cooperated with the FHA in extending an invitation to these meetings to the members of the association in order that all might participate in the Chicago program of the Federal Housing Administration and in order to stimulate modernization work, particularly in the sale of plumbing products. Much beneficial information was secured by the master plumbers who attended these meetings that would enable them to profitably participate in the modernization program that is being encouraged and sponsored by the FHA.

Creviston Opens FHA School With Plea for "Better Housing"

Russell G. Creviston, sales promotion manager of Crane Company, Chicago, was one of the principal speakers at the opening session of the FHA's three-day school for building material dealers, contractors and architects which was held at the Palmer House, Chicago, March 18 to 20.

The meeting was attended by many leaders in the plumbing and heating field, and much enthusiasm was displayed as to the business-getting possibilities made available through the FHA program.

Mr. Creviston's subject was "Better Selling of Better Housing." He remarked that the government's interest in housing is divided into three major classes of activities, namely, educational, experimental and regulatory. He classified the Real Property Inventory and the Financial Survey, conducted as PWA activities, as purely educational. The facts brought out by these two surveys, he said, will prove most useful to the architect, the banker and the contractor. The Real Property Inventory, he said, reveals, the following facts:

Russell G. Greviston

Sixty per cent of the 29 million buildings in the United States are in need of repair (at an average of $100 per building the potential business is 1¾ billion dollars).

Thirty-one per cent of the dwelling units in the United States are heated by hot air furnaces.

Twenty-one per cent of the owner occupied homes have mechanical refrigeration.

Seventy-eight per cent of all families pay less than $30 a month rent (Mr. Creviston remarked that a Henry Ford is needed to put housing within the reach of the masses).

The Subsistence Homesteads, and the Low Cost Housing projects under the PWA and the TVA are admittedly experimental, he said, but who knows but what out of these experiments may come a solution, in part at least, of the housing problem for the low-income group of our population.

The Home Owner's Loan Corporation, the Federal Home Loan Bank System, and the Federal Housing Administration are regulatory in their effect, Mr. Creviston remarked.

"The first step in selling is a proper understanding of the product in terms of the buyer and in terms of our own relation to the ultimate sale," Mr. Creviston said. "This latter is particularly true in our industry where no one factor delivers a finished product.

"In terms of consumer preference, most of our products and services are in what we call, the 'remote preference group.' It doesn't do any good to argue that a bath tub or an electric refrigerator is more important to good living than a radio or an automobile. when the cold facts of experience show that people do not buy what they need but what they want. This means that our materials must be sold, that in very few instances will people purchase building material or equipment voluntarily. We know that it can be done as a great many dealers of all classes are doing it.

"The plumbing and heating industry," Mr. Creviston remarked, "leads all other branches of the construction industry in the total amount spent for advertising under the FHA. As a result of this increased use of advertising, sales of such equipment for modernization work are running 30 to 40 per cent ahead of the corresponding period of last year."

Manhattan Association Has Beefsteak Dinner

The Association of Master Plumbers of the City of New York, Manhattan Branch, held its annual beefsteak dinner on February 27. More than 200 persons were present, including members, representatives of manufacturers, wholesalers, utility companies, city departments and the trade press.

The committee in charge was composed of Henry H. Berg, chairman, Nat Weinstein, Al Duguid and Louis Kast, all of whom were praised highly for the efficient manner in which the affair was handled.

After disposing of shrimp cocktails and soup, the guests started making inroads on the beefsteak, which was followed with a large serving of lamb chops. Then came the dessert, coffee and smokes and everyone settled back to enjoy a splendid show consisting of musical and vocal numbers, a monologist and dancers.

The officers of the Manhattan Association are Joseph F. Heck, president; Herbert A. Halloran, vice president; Robert A. Higgins, treasurer; Benj. Fassler, sergeant-at-arms; Herbert Smith, secretary; and trustees, Samuel L. Snyder, Richard Anderson and Henry Berg.

George J. Palmer Elected President of Iowa Central Zone

George J. Palmer of Ames, Iowa, the new president of the Iowa Association of Master Plumbers, was also elected president of the Central Zone of the Iowa Association at a meeting held recently in Des Moines, Iowa. The other officers of the Central Zone organization are: Vice president, L. V. Mills of Webster City, Iowa, and secretary-treasurer, R. G. Jeffords of Fort Dodge, Iowa.

Building Exposition Will Be Held in San Francisco

The Pacific Coast Building Exposition and Convention will be held in the San Francisco Civic Auditorium for nine days commencing May 4. The exposition will be conducted under the auspices of the San Francisco Builders' Exchange, and is actuated by the desire to keep in step with and assist the extensive campaign conducted in the interests of the construction industry by the federal government through the agency of the National Housing Act.

In addition to the exhibits, the various building groups will hold conventions during these nine days. Among others convening will be architects, contractors, engineers, building contractors, home owners' associations, property owners' associations and other groups.

Entertainment will be provided by well known radio and screen stars, special music and stage review. A special soundproof radio broadcasting room will be constructed for air programs which will be featured by a nationally known radio program.

James H. Pinkerton has been named director of the plumbing and heating industry at this show.

Editor Finds FHA Has Pepped-Up Business

Cites Encouraging Residential Vacancy Data Assembled by R. J. Hamilton—Gives First-Hand Information from County-Wide Check

New York, March 9.—"Every city in the United States has undoubtedly felt the good effects of the National Better Housing Program in the form of more employment, more money spent for wages and materials and, recently, in the form of dividend checks," said R. V. Sawhill, editor of DOMESTIC ENGINEERING, today, following a country-wide check.

"Some people who fail to study the full effect of this National Housing Program on American business question the value of the work of the Federal Housing Administration simply because the dollar volume of newly created business might be larger. That does not reveal the benefits American business, particularly the building industry, has secured from the Federal Housing Administration.

"To appraise the full contribution to American business of the Housing Program, one must take into account the complete change which it has made in the viewpoint of the building industry. Thousands of dealers, material and supply men, distributors, salesmen and manufacturers have gained a new and healthy viewpoint during the six months in which this program has been pushed. In spite of the retarding influence of cold weather, the great majority of the building industry has been stirred to new and confident activity.

DIVIDEND PAYMENTS RESUMED

"The record of resumption of dividend payments shows how definitely some companies have realized on this new viewpoint of the industry. Others are approaching the profit-making period and only a comparative few are continuing the old-time attitude of 'waiting for business to pick up.' The Federal Housing Administration has made most of us in the building industry decide to quite waiting and to go after business.

"Continued encouragement of the National Housing Program," continued Mr. Sawhill, whose publication serves the plumbing and heating field, "is vital because the odds are now in favor of the business man who has products to offer the American home. It is essential that the work of the Federal Housing Administration at Washington be continued along its present lines because coming months offer even greater prospects for additional business.

"Some data to which I have just had access substantiates this statement. A short time ago Mr. Rolland J. Hamilton, president of the American Radiator Co., showed me how he had been able to correlate two indices for the building industry with rather striking results.

R. V. Sawhill

"In the early part of 1934 a CWA project was carried out, involving a real property inventory in 64 cities, representing every state in the Union, and with a 1930 population of 9,793,371 persons. The cities selected were 'samples' but the coverage for each city was 100 per cent. The inventory covered 2,633,135 family dwelling units contained in 1,931,055 residential structures of all kinds.

"Following are some of the existing facts: 43,068 structures, or 2.2% of the total, were unfit for use; 297,791 structures, or 15.4% of the total, were in need of minor repairs; 857,648 structures, or 44.4% of the total, were in need of minor repairs; 204,227 dwelling units were vacant, or 7.7% of the total, which includes apartments as well as single family dwellings; 412,342 family units were listed as crowded, overcrowded or greatly overcrowded, being 15.6% of the total number of family units, this in a measure representing the doubling up process made necessary by the depression.

"The foregoing figures made almost a year ago show 7.7% of vacancies in all classes of dwelling units. We now have before us the semiannual bulletin of the National Association of Real Estate Boards setting forth figures compiled from replies to a questionnaire submitted to the secretaries of real estate boards in about 300 cities of the United States and Canada. On December 31, 1934, only 5% of the cities reported an overage in single family dwellings, 42% reported a normal condition and 53% reported a shortage. On December 31, 1927, the overage was 24%, normal 48% and shortage 28%. Between December 31, 1927, and December 31, 1932, the overages went down as did the shortages, but normalcy reached its peak at 76% as regards number of cities involved, with the clear indication insofar as these particular statistics bear weight (and they are the best we have) that at the end of 1932 the supply of single family dwellings was very closely in balance. Since that time the number of cities in which there are shortages in single family dwellings has mounted very rapidly.

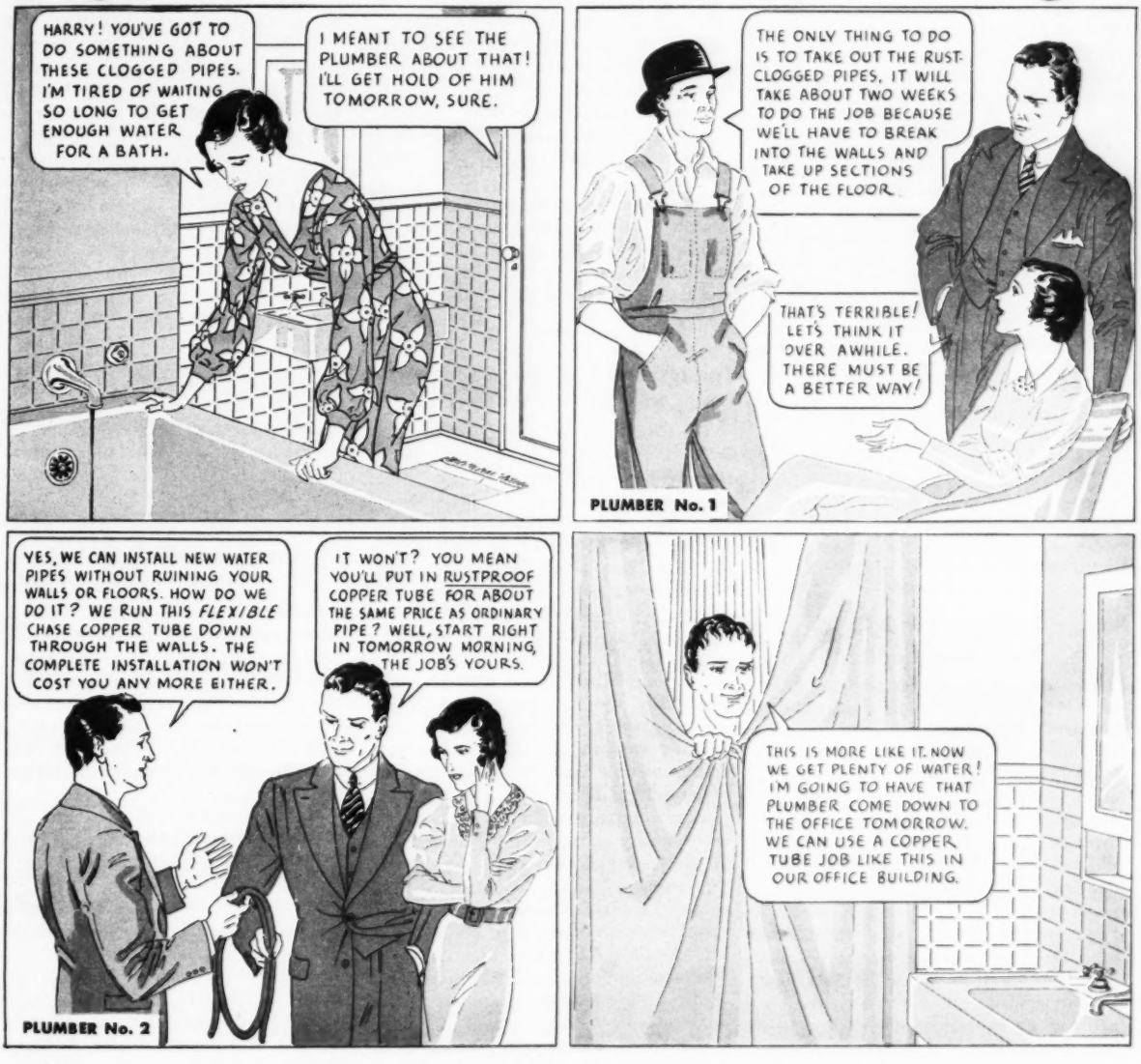
"The situation as regards apartment houses is not as favorable as that of single family dwellings. Nevertheless on December 31, 1934, only 10% of the cities reported an overage in apartment houses, 60% reported normalcy and 30% shortage.

"One other factor in this report is most significant. On June 30, 1932, it was reported that rents of single family dwellings were on the upgrade in none of the cities, were stationary in 10% of the cities and were headed downward in 90% of the cities. Two and a half years later on December 31, 1934, the rents of such dwellings were reported on the upgrade in 53% of the cities, stationary in 38% and on the downgrade in only 9% of the 300 cities included in the study.

Building Inspector Is Needed, Kanney Says

Edward Kanney, La Porte, Ind., is representing the master plumbers of La Porte in the movement among the city's building men to bring building ordinances up-to-date and for the appointment of an inspector. Mr. Kanney says, "conditions in La Porte haven't been what they should be in regard to the kind of plumbing that is permitted. I am for the adoption of a modern code and for the appointment of an inspector." Other building men pointed out that the state building code is frequently violated because the city lacks an inspector. The matter is under the city council consideration at the present, according to Mr. Kanney.

ONE GOOD INSTALLATION SELLS ANOTHER


HARRY! YOU'VE GOT TO DO SOMETHING ABOUT THESE CLOGGED PIPES. I'M TIRED OF WAITING SO LONG TO GET ENOUGH WATER FOR A BATH.
I MEANT TO SEE THE PLUMBER ABOUT THAT! I'LL GET HOLD OF HIM TOMORROW, SURE.
THE ONLY THING TO DO IS TO TAKE OUT THE RUST-CLOGGED PIPES, IT WILL TAKE ABOUT TWO WEEKS TO DO THE JOB BECAUSE WE'LL HAVE TO BREAK INTO THE WALLS AND TAKE UP SECTIONS OF THE FLOOR.
THAT'S TERRIBLE! LET'S THINK IT OVER AWHILE. THERE MUST BE A BETTER WAY!
PLUMBER No. 1
YES, WE CAN INSTALL NEW WATER PIPES WITHOUT RUINING YOUR WALLS OR FLOORS. HOW DO WE DO IT? WE RUN THIS FLEXIBLE CHASE COPPER TUBE DOWN THROUGH THE WALLS. THE COMPLETE INSTALLATION WON'T COST YOU ANY MORE EITHER.
IT WON'T? YOU MEAN YOU'LL PUT IN RUSTPROOF COPPER TUBE FOR ABOUT THE SAME PRICE AS ORDINARY PIPE? WELL, START RIGHT IN TOMORROW MORNING, THE JOB'S YOURS.
PLUMBER No. 2
THIS IS MORE LIKE IT. NOW WE GET PLENTY OF WATER! I'M GOING TO HAVE THAT PLUMBER COME DOWN TO THE OFFICE TOMORROW. WE CAN USE A COPPER TUBE JOB LIKE THIS IN OUR OFFICE BUILDING.

CHASE

You can never tell when a small installation will lead to a good sized plumbing job. So play safe and install plumbing pipe that is up-to-the-minute—absolutely rustproof.

And when it's a question of *what* to use, you'll find that you can depend on Chase Copper Tube and Chase Sweat Fittings. There is never any doubt about a Chase "sweat" job. It's strong, permanent, reliable. It gives your customer exactly what he's looking for—trouble-free plumbing.

Chase Copper Tube and Chase Sweat Fittings sell your customers on your modern methods and ability and keep you a step ahead of competition. Any good prospect will choose a rustproof copper job—especially when you point out that it will cost very little, if any, more than rustable pipes.

CHASE COPPER TUBE AND SWEAT FITTINGS

CHASE BRASS & COPPER CO.

Incorporated

Subsidiary of Kennecott Copper Corporation

Waterbury **Connecticut**

New York State Masters Will Convene April 30

The New York State Association of Master Plumbers will hold its forty-seventh annual convention at the Hotel Pennsylvania, New York City, April 30 and May 1. Joseph R. Mittasch, president of the Queens Association of Master Plumbers, has been named chairman of the convention committee by State President William E. Foley, Richmond Hill.

Other members of the convention committee are Jacob Stockinger, Jr., Queens; J. F. Rogers, Queens; M. J. Kennedy, Brooklyn; Louis Frisse, Brooklyn; A. Halloran, Manhattan; George Arnone, Bronx; Walter Hock, Rockaway; William Metcalf, Nassau; James A. Burns, Staten Island, and Andrew Carl, Westchester.

A plumbing and heating exhibit will be held in connection with the convention.

The annual convention of the Women's Auxiliary will be held at the same time. Mrs. Henri Billharz has been appointed chairman of the women's convention committee. Mrs. Billharz is president of the Queens Women's Auxiliary.

Master Plumbers of Oranges Hold Banquet and Dance

The Master Plumbers Association of the Oranges and Maplewood, N. J., held its annual banquet and dance in Walnut Hall, East Orange, on Monday evening, March 4, with an attendance of approximately 250 persons. Included in the evening's program were an excellent dinner, vocal and musical numbers by professional talent, and dancing to the music of an extremely good orchestra.

Representatives of several master plumbers' associations, women's auxiliaries, wholesalers, manufacturers, and the trade press all joined to make the evening a memorable one.

Among those present were: George H. Werner, director of the N. A. M. P., treasurer of the New Jersey State Association and treasurer of the New Jersey Heating Contractors' Association, and Mrs. Werner; Edmund P. Ingram, president of the New Jersey State Association of Master Plumbers, and Mrs. Ingram; Louis Maier, of the Newark Master Plumbers Association, and Mrs. Maier; Al Ruehl, vice president of the Newark Master Plumbers' Association; George Brenner, fourth vice president of the New Jersey State Association of Master Plumbers, and Mrs. Brenner; Henry Williamson, president of the Montclair Master Plumbers' Association; Mrs. Henry Williamson, president of the Women's Auxiliary of the State of New Jersey; Mrs. James Fitzgerald, secretary of the N. J. Women's Auxiliary, and Mrs. Al. Ruehl, president of the Orange Women's Auxiliary.

Among local officers in attendance were: President Raymond Bocca, Vice President Frederick Hoffman, Recording Secretary Jos. Berg, Treasurer Frederick Bogert and Sergeant-at-arms Herbert Palmatier.

National Director Werner read a telegram from National President John J. Calnan wishing the party a pleasant evening.

The members of the committee, who deserved all the compliments they received, were Willard Durr, chairman; Harold Johnson, Milton Robertshaw and Michael Corvelli.

Inaugurate Campaign for Sale of Gas Water Heaters

To stimulate the sale and installation of gas water heating equipment the Peoples Gas Light and Coke Company of Chicago and manufacturers of automatic gas water heaters have inaugurated a campaign through which it is anticipated the sale of automatic water heaters in the Chicago territory will be tremendously increased.

Under the rental purchase plan, the installed rental purchase price will be the manufacturer's established cash price plus a finance charge of 15 per cent. Down payments will be as low as $1.00 and the monthly rental payments as low as one-sixtieth of the remaining balance.

Any plumbing contractor acting in the capacity of agent for one or more of the manufacturers co-operating with The Peoples Gas Light and Coke Company may take a rental purchase contract from any residential customer of The Peoples Gas Light and Coke Co. The manufacturer after approving the credit of the customer and accepting such contract will furnish an automatic water heater to be installed by the plumbing contractor and subsequently pay him for making the installation and for the cost of city permit. The manufacturer will also pay the plumbing contractor a commission of 15 per cent for obtaining the contract.

The Peoples Gas Light and Coke Company will pay a bonus equal to 20 per cent of the manufacturer's established cash price to any plumbing contractor who sells an automatic water heater to, and installs for, any gas consumer provided, however, it is connected and used within the city limits of Chicago, and provided further that the sale is a cash sale or a deferred payment sale, not financed or billed by The Peoples Gas Light & Coke Company.

All sales of automatic water heaters made by The Peoples Gas Light and Coke Company will be installed by licensed master plumbers and payment for this work will be made by the gas compang on the usual time and material basis. In no event, however, will any commission or bonus be paid to the plumbing contractor directly by The Peoples Gas Light and Coke Company.

The manufacturers co-operating with The Peoples Gas Light & Coke Company will furnish any plumbing contractor with a printed schedule of prices and terms relative to cash sales and rental purchase contracts. A special form has been prepared by The Peoples Gas Light & Coke Company to be used by the plumbing contractor in taking orders for rental purchase contracts. These forms will be furnished to the plumbing contractor by any of the manufacturers co-operating with The Peoples Gas Light & Coke Company in this plan.

Dayton Honors State President Henry Blank

State President's Night was celebrated on March 23 by the Dayton Master Plumbers' Association with a dinner in honor of Henry S. Blank, Dayton, recently elected president of the Ohio State Association of Master Plumbers. Mayor Charles P. Brennan of Dayton was the principal speaker at the president's dinner.

Mayor Brennan paid a tribute to the master plumber, indicating that he is a valuable and needed link in the progress of any community.

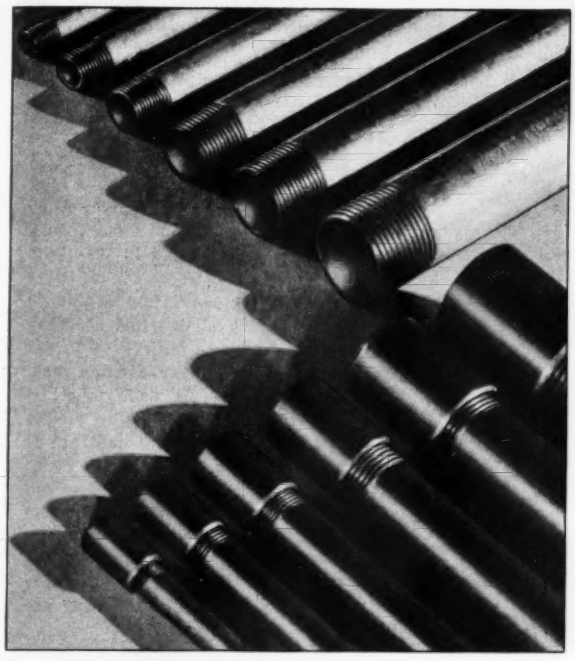
Short talks were given by Edward B. Kleine, Cincinnati, national director and past state president; Edward Frank, Cincinnati, past state president; William C. Tillett, Cincinnati; Homer Crockett, Springfield; John Irving, Middleton; M. J. Gibbons, of M. J. Gibbons Supply Company, Dayton; William F. Stoermer, of W. H. Kiefaber Co., and Samuel Fahrer, Dayton, chairman of the committee on arrangements for the celebration.

William Haas, Dayton, past state president, acted as toastmaster.

In bringing the program to a close, State President Blank responded fittingly to the many tributes paid him during the evening and pledged his best efforts to the membership during his term of office.

Those who assisted Mr. Fahrer with the arrangements were Mrs. John Haas, Mrs. Henry Saunders, Harry Wagner, Henry Grimes, M. H. Genner and F. W. Ricker.

AN EXCLUSIVE PROCESS



..A BETTER STEEL PIPE

The Fretz-Moon "continuous process" differs radically from other methods of pipe manufacture. And, likewise, Fretz-Moon Pipe differs from ordinary steel pipe, because it is better.

Made of highest quality steel skelp that is heated throughout every foot at unvarying temperature, for a definite period of time, without contamination from furnace bottom, and then roll-welded, sized, cut and cooled under precision control, this modern steel pipe possesses high degrees of uniformity, ductility and cleanliness not found in steel pipe made by ordinary methods.

If you would like to read the detailed story of the Fretz-Moon "continuous process," write for it.

FRETZ-MOON TUBE CO., INC.
BUTLER • PENNA.

FRETZ-MOON
PIPE
BLACK AND GALVANIZED

Here's a NEW product

Mule-Kick Creme Porcelain Polish —in new air-tight glass jar—can't dry out.

1. Sold *exclusively* thru plumbers.
2. Fully endorsed by Good Housekeeping.
3. Nationally advertised in Saturday Evening Post.
4. A NEW beauty treatment for porcelain and other surfaces, that cleans, restores and preserves surface gloss.

TRY IT!

IT'S CREATING THOUSANDS OF DOLLARS IN NEW BUSINESS FOR PLUMBERS EVERYWHERE

Thousands of plumbers are finding thru this NEW "Mule-Kick" product and thru this NEW "Mule-Kick" advertising campaign in the Post, a way to thousands of dollars of NEW Business.

Let us show you how. We have a complete plan. Now in operation by thousands of plumbers. Write for it *today*. Use coupon below.

MAKE THIS TEST AT OUR EXPENSE

Our *next* Post ad (April 13) features this "Mule-Kick" Creme Porcelain Polish. There is no better product made for removing rust and stain spots, and restoring surface gloss of porcelain fixtures. Let us prove it to you. Send for trial jar FREE. Try it in your own home. Then you will see why our mail is flooded with requests, "Where can I buy it?", and why thousands of plumbers are making money stocking it, displaying it, and asking their customers to buy.

"Mule-Kick" consists of 3 products —a drain cleaner, a closet bowl cleaner, and the above Creme Porcelain Polish. Far superior in quality to grocery, hardware and chain store brands, and can be sold at chain store price if satisfied with chain store profits—that, however, is not necessary.

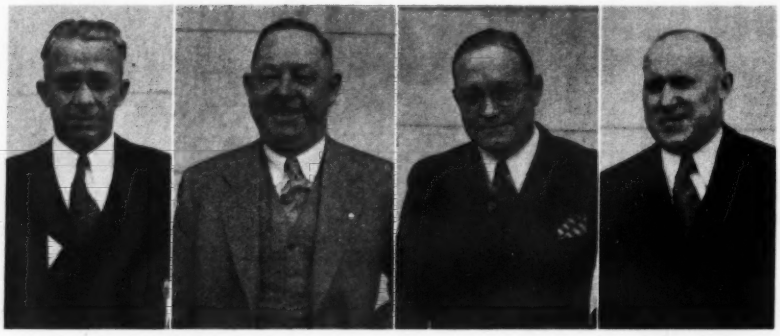
J. A. Sexauer Manufacturing Co., Inc.
2503 Third Ave., New York, N. Y.

Gentlemen:

....Send me a trial jar of your NEW "Mule-Kick" Creme Porcelain Polish that now comes in air-tight glass jar. I want to try it in my own home.

....Tell me all about your "Mule-Kick" plan to get NEW business for the plumber.

Name .....
Address .....
City ..... State .....



Left to right: H. A. Bachofer, Salina, newly elected state president; H. P. Dunaway, Wichita, vice president; H. L. Stevens, Hutchinson, treasurer, and Carl McGregor, Winfield, secretary

Kansas Masters Select H. A. Bachofer As Leader

State Votes to Revive Zone System for Its Monthly Meetings. Members Display Keen Interest in FHA Movement

The forty-second annual convention of the Kansas Master Plumbers' Association was held in Topeka, Kans., March 11 and 12. The headquarters were at the Jayhawk Hotel and all sessions were held in the convention hall of that hotel. Mayor Omar B. Ketchum of Topeka gave the fifty or more delegates a hearty welcome.

In the absence of State President E. L. Wolfe of McPherson, Vice-President H. A. Bachofer, Salina, conducted the convention. Mr. Bachofer was elected to the presidency of the association at the election of officers for the ensuing year. The other officers elected were H. P. Dunaway, Wichita, vice-president; H. L. Stevens, Hutchinson, treasurer; and Carl McGregor, Winfield, secretary.

The place of the next convention will be decided by the incoming officers.

FHA TAKES THE SPOTLIGHT

The principal speakers of the first session were representatives of the state and national division of the FHA and considerable interest was shown in the various sections of the act as described in detail by these several speakers.

Homer Bastian said that there are now 276 active campaigns making a survey of the houses in the state and that to date they have uncovered 25 million dollars worth of repair work pledged to be done. He said that it is up to the contractors to cash in on these pledges, and at the same time he pointed out that getting a pledge and securing a signed contract are entirely different matters. Figures from Washington show that an average of six calls must be made by contractors, after the pledge is in and before the actual contract is signed, Mr. Bastian remarked.

Thomas Burch, chief underwriter, advised all contractors to get behind the FHA regardless of whether they do new work or repair work and pointed out that new construction can not come until the value of existing buildings has increased. He remarked that nothing helps to increase the value of a home more than new plumbing fixtures, a new heating system or modern air conditioning equipment.

Kent Robinson, a field man for the FHA, told of a plumbing and heating contractor who has increased his business by more than two hundred percent during the past few months through working with his local FHA Campaign Committee and following up the leads he has received through them.

Mrs. E. D. Hornbrook, Kansas City, Mo., past president of the National

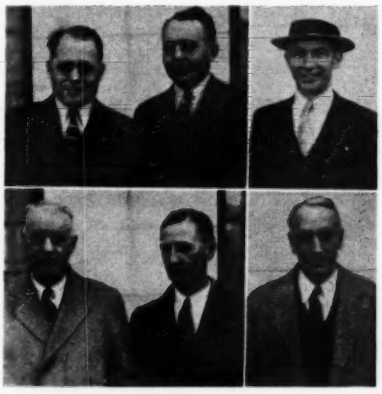
Top row, left to right: G. L. Curtis and B. A. Sutton, both of Iola; Chester Davidson and N. K. Jensen, both of Wichita; K. W. Talbott, Pratt; J. E. Lansdowne, Wichita; C. Philipp, manager, Crane Co., Wichita; E. H. Graham, manager, Crane Co., Kansas City, Mo., and Eugene Goodson, manager, Missouri-Kansas Supply Co., Kansas City, Mo. Lower row: C. E. Harris and L. H. Phillips, both of Kansas City; Roy Grinter, Kansas City, representative of Central Tube Co.; William B. Talbott, manager, Baker Mfg. Co., Kansas City, Mo.; W. A. Russell, manager, and C. W. Adams, both of Kansas City, Kans., branch United States Radiator Corporation; Ike Roark, manufacturer's agent and Fred C. Burns, Kansas City, Kans., manager of Kewanee Boiler Corp.; and F. F. Dodds, manager of the Kansas City, Kans., branch of American Radiator Co.

Women's Auxiliary, told of the work of that group and brought greetings from the Kansas City (Mo.) Auxiliary, of which she is the president.

H. O. Green, Tulsa, Okla., treasurer of the National Association of Master Plumbers, was the official representative at the convention for National President John J. Calnan, Chicago. Mr. Green paid tribute to the late E. D. Hornbrook, Kansas City, Mo., past national president, for the part he had in building the National Association of Master Plumbers.

The speaker reviewed the history of the National Association and said that today it is in the best condition ever. Mr. Green brought the greetings of National President Calnan and told of the work that the national officers are doing to keep the association in its present strong position.

Mr. Green expressed the opinion that



Left to right, top row: H. Painter, Hoffman Specialty Co., Inc., Kansas City; J. E. Hesser, Standard Sanitary Mfg Co., Kansas City, and John Ehrig, Independence. Lower row: A. T. Olson, Lawrence; E. A. Cline, Kansas City, representative of The Trane Co., and C. M. Simmons, Kansas City

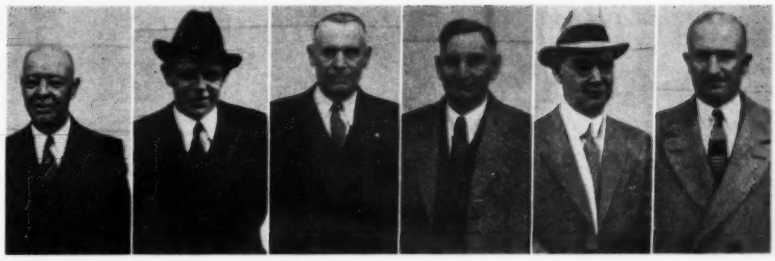
the N. R. A. promised the industry more than it was able to carry out. He remarked that it is the master plumbers' duty to see that the present laws are enforced and to work for better sanitary laws.

He suggested that the Kansas association start a drive for members and remarked that a large membership of loyal master plumbers will provide the best type of protection, regardless of codes or any other outside agency. A large association membership, Mr. Green said, will make it possible to get laws passed to protect the health of the public, and also to help the industry. In closing, Mr. Green urged all of the members to attend the national convention in Chicago.

A resolution was adopted to revive the zone system of meeting and to divide the state into a number of small zones so that members in each zone will have no difficulty in meeting at least once a month. In another resolution, it was voted to adopt the plumbing code that has already been approved by the National Association of Master Plumbers.

Robert J. Barrett, Washington, D. C., executive director of the divisional code authority, who was scheduled to speak, was unable to attend, and State Administrator H. L. Stevens of Hutchinson ably filled his place on the program.

As is the custom in Kansas, the members of the association had lunch with the wholesalers and as usual some interesting subjects came up for discussion between these two groups.



Left to right: H. O. Green, Tulsa, Okla., treasurer, National Association of Master Plumbers; William Ball, Kansas City, past state president; George W. Sutherin, Topeka; J. M. Simmons, Wichita; J. A. Patterson, Topeka and C. H. Parker, Dodge City, representative of Sterling Engineering Co., Milwaukee, Wis.

Honor Illinois Group With Dinner in Chicago

The officers of the Illinois Master Plumbers' Association tendered a dinner to the members of the Finance and Arrangement Committee at the Congress Hotel, Chicago, on March 16, following an open house in the afternoon during which master plumbers and wholesalers fraternized in a buffet luncheon and refreshments.

The committee, which is composed of members of the Illinois association and the Chicago Credit Bureau, was in charge of the arrangements for the state convention held at Springfield in January. For the past five or six years the committee has been conducted and financed in cooperation with the wholesalers, who with the master plumbers have been interested in promoting an educational program to advance the welfare of the industry in Illinois.

Henry P. Reger of Chicago, who retired in January as state president after three years of distinguished service, acted as toastmaster following the dinner, calling upon those in attendance for brief remarks. J. A. VanNattan of Springfield, president of the state association, who came to Chicago for the occasion, complimented the manufacturers and wholesalers for their outstanding work in Illinois.

Following brief talks by Vice Presidents Thos. F. Hanley and Art Stephens and Treasurer William F. Hildeman, National President John J. Calnan paid a tribute to the great work in organization accomplished by Mr. Reger during his presidency. George Hoffman of Crane Company, and W. J. Spillane of James B. Clow & Sons also added their meed of praise of Mr. Reger for his work as an organizer in building up the membership of the Illinois association at great personal sacrifice. Both speakers expressed the opinion that the problems of the industry could be solved successfully only through united action on the part of manufacturers, wholesalers, master plumbers and journeymen.

William Brookman, who was also complimented by the National President for his excellent work as secretary of the Illinois Association, submitted a financial report of the convention.

Others in attendance who spoke were William J. Lang, Ben Weil, Joseph Pireaux, Kenneth McKenzie, P. M. Mork, Harry Yelton, William Redieske, James W. Fettes, Rupert J. Weber, Charles Barrows, Joseph Comer, William Fullagher, Charles J. Stanley and Peter M. Munn.

Among those who dropped in during the afternoon were Charles E. Gawne, president of the Chicago association, Walter Kohler, of Kohler Company, and R. V. Sawhill, editor, and G. T. Carson, publisher of DOMESTIC ENGINEERING.

C. W. Richmond Dies

C. W. Richmond, master plumber of McAllen, Tex., died recently. Mr. Richmond was a member of the Associated Master Plumbers of Texas and had been a loyal worker for many years.

Iowa Holds Lively Meeting; State Officers Are Reelected

Business-Getting Opportunities Offered by FHA Are Stressed. Secretary Reports Gain of Thirty-three Per Cent in Membership

With the largest attendance in several years and keen interest of members in questions of the day as discussed by speakers, the forty-fourth annual convention of the Iowa Association of Master Plumbers, held on March 20, at the Fort Des Moines Hotel in Des Moines, was a notable success.

The work of the officers for the past year received the strongest of all praise,

Left to right: J. W. Lundon, Dubuque, state secretary; R. G. Jeffords, Ft. Dodge, director; G. J. Palmer, Ames, state president

unanimous reelection of all officers for another year. They are, President, G. J. Palmer, Ames; vice president, William Hagan, Sioux City; secretary, J. W. Lundon, Dubuque; treasurer, Frank Pierson, Fairfield.

Those reelected to the board of directors were: R. G. Jeffries, Fort Dodge; H. N. Labbitt, Sioux City; H. F. Schwartz, Burlington, and R. P. Kerker, Davenport.

The speakers on the extensive program, from the opening paper of Secretary Lundon, reporting a membership gain of 33 1/3 per cent, to National Secretary Charles Gawne's dynamic closing speech, brought many new ideas and enthusiasm to members. Mayor Dwight Lewis of Des Moines welcomed the master plumbers to the city and gave high praise to the plumbing trade in the part it played in protecting public health. He described an extensive housing project planned for Des Moines which would mean a large volume of business to contractors there.

President Palmer in his report asked that zone meetings be continued as a method of passing ideas amongst contractors during the year. He urged members to take advantage of the FHA as a source of business. He then asked further support in the campaign for "every member to get another member."

The chain stores question came in for a discussion as a timely topic as the Iowa legislature was in session at the time and was considering levying special taxes on these groups. R. J. Cavanaugh of the Independent Business Association of Iowa asked for the support of master plumbers in fighting chain stores in their own neighborhoods, stating that about a third of all the retail business done in Iowa, is received by chain stores.

George Masterson, organizer for the journeymen plumbers, spoke with a plea for fairness and cooperation between

Top row, left to right: J. W. Watson and A. G. Peterson, both of Des Moines; C. E. Carlson, Sioux Falls, S. D., president, South Dakota M. P. association. Lower row: C. W. Helstrom, Globe Machinery & Supply Co., Des Moines; J. M. Bickell, Carrier Engineering Corporation; H. A. Clauson, Lead Industries Bureau, Chicago

master and journeymen plumbers. He pointed out that both had invested many years of experience in the plumbing business and only together, could the industry progress.

President of the American Medical Association and Health Commissioner of Iowa, Dr. Walter S. Bierring, introduced Dr. Carl F. Jordan of the state board of health, by outlining the great need for proper sanitation in rural districts. He pointed out that Iowa has some 9,115 one-room schools without proper sanitary inspection, that about 60 per cent of the state's population lived in rural districts, and that thus, there was great need for proper protection to health. He described the state board of health's present inspection program of public buildings and state institutions.

Dr. Jordan, using a blackboard, showed how the amebic dysentery germ differs from others and how it affects the human body. He stated that from 5 to 10 per cent of all persons in the United States have amebic dysentery and warned against the danger of these carriers where proper sanitary facilities do not exist.

The Chicago epidemic of amebic dysentery with its causes, was described by Joel I. Connolly, Chicago board of health, with stereopticon slides and from a paper prepared by Dr. Herman N. Bundesen, president, Chicago board of health. He also described typically incorrect and dangerous plumbing installations as discovered by Chicago board of health inspectors.

The FHA, with its possibilities, its success in other lines of business and what it could mean to the plumbing contractor was outlined by Ray Baxter, assistant state director in Des Moines. He stated that only 42 per cent of Iowa's homes have central heating plants, less than 33 per cent have hot water and

Top row, left to right: C. E. Gawne, Chicago, national secretary; Joel I. Connelly, Chicago board of health and Al Weiters, state sanitary engineer. Middle row: Bill Hagan, Sioux City, state vice president, and H. N. Labbett, Sioux City, president of Sioux City association. Lower row: R. P. Kerker, Davenport, director, and Frank Pierson, Fairfield, state treasurer

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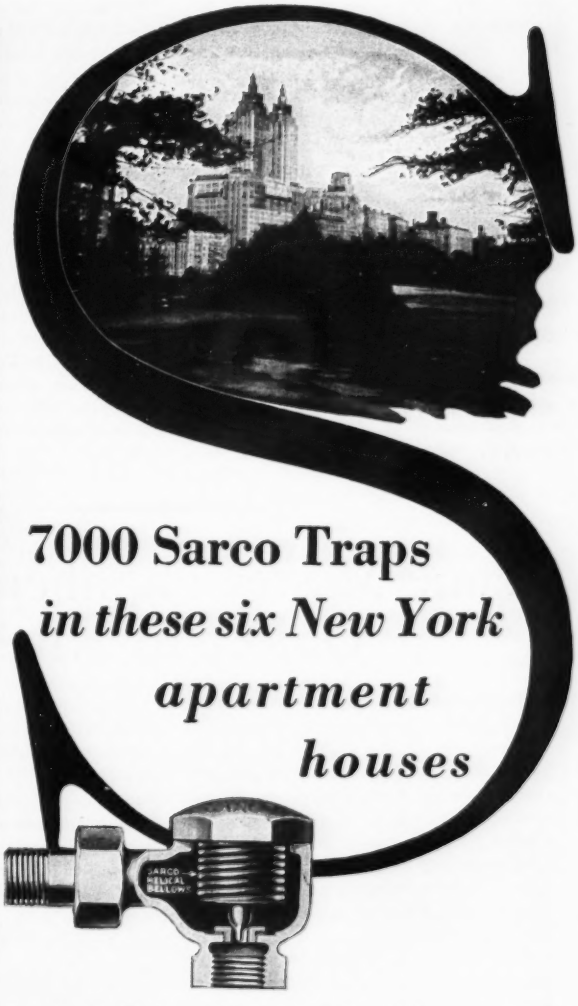

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about 8 per cent have no water at all. He pointed out that 135 communities have already completed Better Housing Campaigns and that wholesalers and manufaturers are solidly behind the FHA because it has produced a definite increase in business. He urged the master plumber to take advantage of this project as well.

In closing he touched on several methods of utilizing the FHA to secure jobs. "Dress up the plumbing job in a complete package," he said. "Don't talk total price, but instead talk in terms of so much a month for the complete package." In conclusion he outlined the various phases of Title 2 of the FHA.

Late on the afternoon's program, Charles Bryant of a Des Moines loan company discussed "Credit" and how through its liberal use the same dollar might be turned over several times.

National Secretary Gawne concluded the program with a powerful speech in which he described what could be done against the "handy man" by enforcing licensing laws and ordinances. He asked that the plumbing and heating industry keep a solid front, from the plumber, through his wholesaler to the manufacturer, pointing out that by this method victory could be achieved in the fight against the pirate-outsider.

Among the out of town visitors at the convention were Emil Carlson, President of the South Dakota Master Plumbers Association, Sioux Falls; E. H. Gardner of Josam Mfg. Company, Cleveland, and H. A. Clauson, Lead Industries Bureau, Chicago.

Maine Master Plumbers Object to NRA Rulings

The Maine Master Plumbers' Association held a successful convention at Lewiston on March 12 and 13, at the Dewitt Hotel. The well arranged program included a number of prominent speakers, including P. W. Donoghue, Boston, Mass., national director and past president of the National Association of Master Plumbers, and George F. Williamson, FHA administrator in the Portland district.

The delegates expressed in strong terms their displeasure in recent Federal appointment of two high officials of Sears, Roebuck Company, largest mail order house in the United States, to responsible positions in the federal government's administration. President Wood of the mail order house is on the advisory board that will handle the expenditures under the $4,800,000,000 relief bill, and Vice President Nelson is a member of the NRA administration.

These appointments by the President have been strongly criticized by master plumbers in all sections of the nation, and by the National Association of Master Plumbers.

Ernest R. Graham, Bar Harbor, was elected president of the association for the ensuing year. Wilbur F. Blake, Portland, was named vice president, Jerry Donovan, Winthrop, secretary, and John J. Hennesey, Augusta, treasurer. President Graham will select his board of directors in the near future.

Mr. Donovan, who has served as secretary of the Maine association for approximately twenty-two years, was elected a life member of the association in appreciation of his many years of faithful service.

The business-getting opportunities made available through the FHA movement were outlined fully by George F. Williamson, FHA administrator in Portland.

The speaker pointed out that over a six-month period, the FHA produced $1,500,000 of work in the State of Maine. This work consisted of 4,000 projects, each of which required an average of three weeks for completion, according to Mr. Williamson. Each of these projects employed an average of three men for the three-week period. The speaker pointed out that this gave employment to approximately 12,000 men for each three-week period.

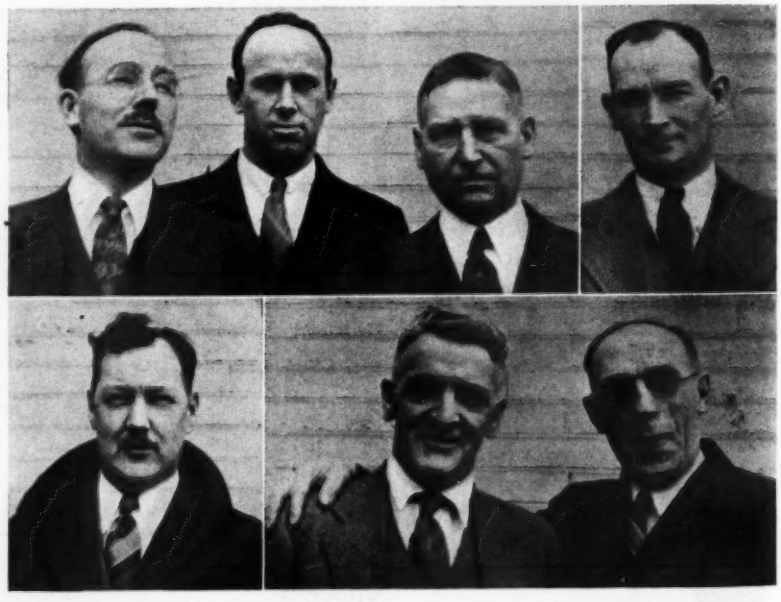
Mr. Williamson described briefly the results of a housing survey made in the state recently. He said that 9,000 were visited, 6,000 of which were occupied by the owners. This survey, he said, resulted in 1,100 prospects for modernization work. The names of these prospects were filed, and are now being distributed equally among various building and fabricating contractors and dealers in the various communities. The speaker pointed out that a check is made to make certain that each prospect has been followed up and a deal closed.

Mr. Williamson explained that FHA headquarters are maintained in seven localities in the state, as follows: Lewiston, Ellsworth, Orono, Biddeford, Augusta, Yarmouth and Portland.

The report of the retiring president, John T. Kerrigan, Lewiston, was delayed, and copies of this will be forwarded to the members at a later date.

A communication was read from John J. Calnan, Chicago, president of the National Association of Master Plumbers, expressing his best wishes for a successful convention. President Calnan was represented at the convention by National Director Donoghue.

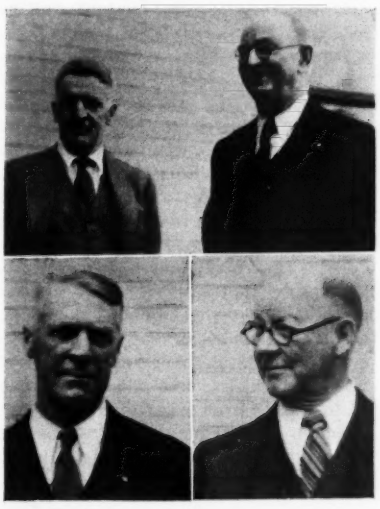
Mr. Donoghue not only described fully the work and activities of the



Top row, left to right: Dr. E. W. Campbell, director state division of sanitary engineers; J. Elliott Hale, division of sanitary engineers; Ernest Cunningham, Portland, past state vice president, and J. F. Church, Winthrop. Lower row: J. F. Shaw, Hall & Knight Co., Lewiston; John Kerrigan, Lewiston, past state president, and Larry Lasher, sales manager, Anderson Mfg. Co., Cambridge, Mass.

N.A.M.P., but also made an interesting and helpful talk on code problems. Described the workings of the plumbing code, and the procedure for setting up bid depositories. He discussed in some detail the matters of wage scales and hours of labor under the code. In this connection, Mr. Donoghue said it is imperative for master plumbers and journeymen in various localities within the state to make immediate efforts to reach agreements on wage scales.

Dr. E. W. Campbell, director of the Sanitary Engineering Division of the State of Maine, made an interesting address. He told of the work the division is doing to prevent contamination of water supplies through cross-connections. He mentioned several cases where the sanitary engineering division has successfully prosecuted master plumbers for violation of the sanitary code. Doctor Campbell distributed copies of the new state plumbing regulations.



Top row, left to right: John Kerrigan, Lewiston, and George Noyes, Presque Isle, both past state presidents. Lower row: Iver Iverson, Portland, and F. C. Park, Orono

Iver Iverson, Portland, took the floor for a few minutes to tell how a master plumber might lose a great deal of money through failure to adhere to the sanitary regulations. He cited as an example a large job which was awarded a plumbing contractor at a low figure. In order to shave his costs, this contractor substituted a different kind of pipe than that permitted by the code and also, contrary to the code, failed to back-vent the job. The contractor was ultimately forced to correct the installation at an additional cost of approximately $11,000, according to Mr. Iverson's description of the case.

Left to right: E. R. Graham, Bar Harbor, president, Maine association; Wilbur F. Blake, Portland, state vice president, and J. J. Hennesey, Augusta, state treasurer

The delegates asked the incoming president to appoint a committee of three persons to cooperate with the state board of health relative to revising the regulations of the state code on piping for drainage and waste work. It was suggested that this committee, and also as many members of the association as possible, meet at the offices of the sanitary division, at Bangor, on the first Tuesday in August, to assist in changing this section of the code.

The convention delegates voiced strong opposition to the NRA rulings in a resolution adopted at the meeting. Copies of this resolution are to be sent to each congressman and senator representing Maine at Washington, D. C., and also to the office of the National Association of Master Plumbers. The resolution is substantially as follows:

WHEREAS, the plumbing industry in the State of Maine is in a deplorable condition on account of the high wage scale imposed on it by the NRA, and

WHEREAS, the consumer is able to buy plumbing material from D.t.u.'s, mail order houses and in some cases from plumbing wholesalers at a lower price than the same material can be purchased by master plumbers from wholesalers, and

WHEREAS, Vice President Nelson of Sears, Roebuck & Company is a member of the NRA administration, and General Wood, president of Sears, Roebuck & Company, is on the advisory board that will handle the expenditures under the $4,800,000,000 relief bill when passed by Congress, and

WHEREAS, it has been found impossible to enforce the rulings of the NRA in the State of Maine except to the detriment of master plumbers who have tried to live up to these rulings, therefore be it

RESOLVED that the Maine State Association of Master Plumbers go on record as opposed to any and all rulings imposed by the NRA, insofar as they affect the plumbing industry, until such time as the NRA gives assurance that plumbing wholesalers will be able to buy plumbing material at a lower price than D. t. u.'s and mail order houses, thus giving master plumbers a fair break and eliminating cut-throat competition. Therefore, be it

FURTHER RESOLVED, that the NRA wage scale be ignored and substituted with wage scales based upon business conditions in the various sections of the state, and be it

FURTHER RESOLVED, that we strongly urge the removal of Mr. Nelson and General Wood from the positions they now hold with the administration at Washington, D. C.

Describes Hazards of Antiquated Plumbing

The hazards to health of antiquated and defective plumbing were explained at two meetings held under the auspices of the Minnesota State Board of Health in the auditorium of the Engineering Building of the University of Minnesota on March 22.

The speaker was Major Joel I. Connolly, chief of the Bureau of Sanitary Engineering, Chicago Board of Health. Major Connolly was in charge of the investigation of plumbing conditions in two Chicago hotels which resulted in fifty-two deaths and more than one thousand illnesses from amebic dysentery.

At a meeting at noon on March 22, also held in the auditorium of the Engineering Building, Major Connolly addressed owners of income property in Minneapolis and Saint Paul, architects, engineers and health officers.

The meeting on Friday evening was for plumbing contractors.

Arrangements for the meetings were made jointly by Harold A. Whittaker, Minnesota State Sanitary Engineer, and officers of the Minnesota Master Plumbers Association.

Delegates and guests attending the annual convention of Minnesota State Association of Master Plumbers

Minnesota Reelects State Officers for Another Term

Talks on the NRA plumbing code, the state plumbing laws, the federal housing program and sanitation occupied the attention of delegates attending the forty-first annual convention of the Minnesota State Association of Master Plumbers. The convention was held at Virginia, Minn., February 25 and 26. This was the first time in fourteen years that the Minnesota Master Plumbers had held their annual meeting outside of Minneapolis or St. Paul and the first time in the forty-one years of the state association's history that it has convened in Virginia.

NEXT YEAR'S OFFICERS

The delegates reelected all but three of last year's officers and directors. Officers for the ensuing year are: R. L. Anderson, St. Paul, president; Henry C. Hanson, Virginia, first vice president; Otto T. Nelson, Minneapolis, second vice president; W. L. Neihart, St. Paul, treasurer, and Oscar Nelson, St. Paul, secretary. F. C. Stiller, Minneapolis, retiring treasurer, was elected to the board of directors, as was H. Merwin Porter, Minneapolis.

The following directors were reelected: A. C. Schirmer, Hibbing; A. J. Plaunt, Duluth; Walter G. Krost, Fairmont; Ben Benson, Willmar; Charles Olsen, Winona; Louis Zuehls, St. Paul; Martin Wold, Duluth, and W. A. Quinn, Minneapolis. Selection of the 1936 convention city was left for later action by the board of directors.

At the closing business session a resolution was adopted memorializing Congress to adopt an amendment to the Work Relief Bill now under consideration which would provide that all construction work created by the bill where 10 per cent or more of the labor cost entails the use of skilled labor, such work to be allotted by competitive bidding on contract. As the Work Relief Bill now stands, the government would be empowered to purchase materials on work projects and to employ men on relief for the labor, it was explained.

The convention was opened with an invocation by the Rev. E. H. Polster of Virginia and the delegates were welcomed by Mayor Purcell. President Anderson formally called the convention to order and presided at the various sessions. The first business session consisted principally of the reading of reports from the various regional associations.

The Range Master Plumbers Association acted as host, with Earl F. Heisel of Virginia as general chairman of arrangements. The officers of the Range Association are: Archie Gavin, Virginia, president; A. C. Cherne, Eveleth, vice president; William Heisel, Virginia, secretary-treasurer, and Henry C. Hanson, Virginia, and John Anderson, Eveleth, directors.

TELLS VALUE OF ORGANIZATION

W. J. Cannon, St. Paul, secretary of the Minnesota department of health and Dr. A. J. Chesley, St. Paul, a member of the state board of health, talked on sanitation measures to be observed by master plumbers. An explanation of the NRA plumbing code was made by Mr. Porter, state director of the code authority.

The Federal Housing Act was reviewed by E. Y. Arnold, Minneapolis, executive manager of the state association. Charles E. Gawne of Chicago, secretary of the National Association of Master Plumbers, represented that organization at the convention and participated in a helpful manner in the sessions. W. C. Handy, of the state department of health, spoke on sanitation in plumbing.

The value of organization in the plumbing industry to promote health laws in the state was pointed out by Mr. Gawne in addressing the convention. The doctor and the plumber should work hand in hand, Mr. Gawne said, as he launched into an account of how the correction of a water supply system in the city of Chicago was responsible for the stopping of an outbreak of amebic dysentery. When a cross-connection of different supplies of water in Chicago and a large number of leaking valves were eliminated, the dysentery epidemic, which caused a large number of deaths in the city was stopped, he said.

SPEAKS ON NRA

Mr. Gawne spoke of the opposition of the plumbing industry to the $4,800,000,000.00 work relief measure in Congress before the McCarran prevailing wage amendment was attached to it. The original measure would have eliminated the middle man in business, he said, in referring to the provisions which would allow the government to purchase materials on work projects and to employ relief labor direct without resorting to the letting of contracts on a competitive basis. The latter method he described as the cheapest in the long run.

Mr. Porter spoke on the plumbing code and the future of the NRA as he saw it. It was Mr. Porter's opinion that regulation of hours and wages as contained in the code are still necessary. He found the work of organization and education of plumbers under the code was larger than anticipated.

Mr. Porter told of the administration's plan for a redrafting of the NIRA, proposed new hearings on codes and the contemplated dropping of the penal clause in the NIRA as suggested by President Roosevelt.

The convention was brought to a close with a banquet in the recreation building auditorium, followed by a dance. A special program of entertainment was provided for the women attending the convention. This consisted of a swimming demonstration by a group of high school girls and a program of musical selections and readings. In addition, the women were taken on a tour into the surrounding countryside and enjoyed a bridge luncheon at the Fay Hotel.

Heating Association Is Proposed for New Jersey

At the third quarterly convention of the New Jersey State Master Plumbers' Association held recently in Camden, considerable interest was expressed by the delegates in a proposed new association to be called the New Jersey Heating Contractors' Association. Incorporation papers for this new organization are now in the process of being drawn up.

Among those who are taking an active part in the organization of this new association are Louis Maier, Newark; Irving Chew, Haddonfield; George Bird, Elizabeth, and George Werner, Orange.

Portland Master Plumbers Hold Annual Meeting

A. L. Kuntz, Kuntz Plumbing Co., was re-elected president of the Portland, Ore., Master Plumbers Association at the recent annual meeting. Jack M. Behr, Behr Plumbing Co., was named vice president; Kenneth R. Murhard, Muirhead & Murhard, recording secretary, and Henry X. Brown, financial secretary. Mr. Brown succeeds himself for the the 34th consecutive year. C. C. McCoy, McCoy Plumbing Co., was elected treasurer. Fred VanHoomissen, Richmond Plumbing Co., and J. R. Widmer, Widmer Plumbing & Heating Co., were chosen directors for two-year terms, while H. H. Colliver was named director for one year to fill the unexpired term of R. D. Rennie who recently resigned.

Jack Aschenbrenner, secretary of the local zone compliance board for the plumbing industry, told of the good accruing from operation under the code, particularly in Willamette Valley towns where difficulties had been ironed out. "We are reaping increasing benefit from the code, and the outlook for results under the planned program in our industry grows brighter daily," he added.

Guest speakers included Professor W. J. Gilmore of the agricultural engineering department, Oregon State College, Corvallis, who urged the plumbers to develop the potential plumbing business shown to exist by Department of Agriculture surveys.

New Jersey Master Plumbers Hold Third Quarterly Convention at Camden

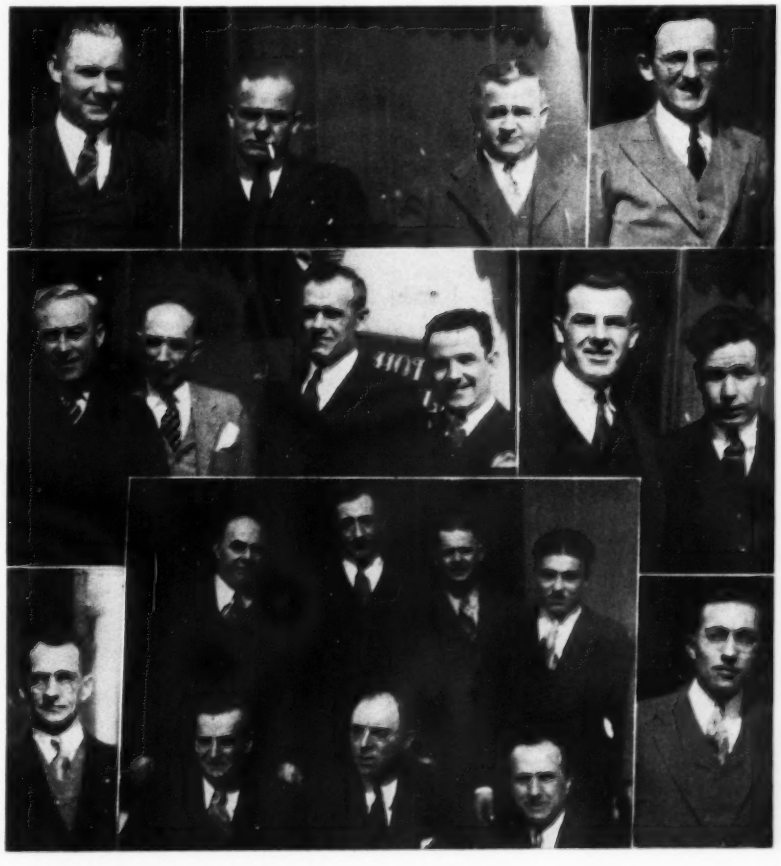
The third quarterly convention of the New Jersey Master Plumbers' Association was held recently at the Walt Whitman Hotel, Camden. State President Edmund P. Ingram of Jersey City opened the meeting after the response to Mayor Stewart's welcome by President Clarence Scull of the Camden association.

The morning session was devoted largely to a discussion of the plumbing code, Robert J. Barrett, Washington, D. C., executive director of the divisional code authority, leading the discussion.

A number of resolutions were adopted by the convention delegates.

They went on record as opposing the proposed state sales tax; they opposed any further increase in the state gasoline tax and they also opposed any further increase in the tax on trucks weighing less than 8,000 pounds.

Senate Bill No. 208 was endorsed by



Top row, left to right: George Bird, Elizabeth; George McVoy, Plainfield, state vice president; John Kleinhans, Elizabeth, and Howard A. Burris, Vineland. Middle row: Irving Chew, Haddonfield; Harry C. Wittmaier, Collingswood; Clarence Scull, president of Camden association; Thomas Milnamow, III, Collingswood, state treasurer; Paul Eichfeld and C. J. Schmidt, both of Camden. Lower row: A. C. Ray, Newfield; group from North Hudson association, and Charles Figerole, president of the Vineland Association

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the delegates in a resolution and the bill will be supported by the state association.

In another resolution, the National Association of Master Plumbers was requested to take action regarding the wage scale on PWA work under the agreement signed on April 30, 1933, which ignores the NRA. It was requested that the N. A. M. P. try to have this clause and date stricken out so that on all work the prevailing rate of wage at the time of estimating may be inserted.

In another resolution the delegates expressed the opinion that on PWA work a pre-determined rate for semi-skilled labor should be inserted in all specifications.

The association went on record as approving the $4,880,000,000 Work Relief Bill. It was voted that New Jersey's representatives in Congress should be notified to the effect that the master plumbers in the state are in favor of work under this act being awarded through the regular contracting branches of the building industry.

A resolution was adopted calling for the appointment of a committee to study the amebic dysentery situation and to contact the state board of education and various other state institutions and agencies.

The delegates voiced in strong terms their opposition to the appointment of two Sears, Roebuck & Company officials, Vice President Nelson and President Wood, to positions with the federal administration in Washington.

President Ingram reminded the delegates of the forthcoming New Jersey State Convention, which will be held in Jersey City, May 15 to 18. Headquarters will be at the Plaza Hotel.

Mr. Barrett covered all phases of the plumbing code situation in his address. He remarked that the code probably is the best one that has been submitted to Washington and that it was designed to help both the small and the large contractor. He said that the code should not be looked upon as a law, but instead as an instrument that would lead to a more prosperous and successful way of doing plumbing and heating business.

He urged his hearers to take full advantage of the code and to adhere to the spirit of it. He pointed out that the NRA probably will be continued for another two years. He explained that NRA offices will be set up in various sections to take care of violations and remarked that this will mean quicker enforcement.

Mr. Barrett pointed out that the plumbing code has eliminated bid peddling and explained the operation of the bid depositories that have been set up in various cities. In closing, he urged those present to pay their assessments so that the code work could be continued.

President Ingram gave a complete summary of his work since the previous quarterly meeting. He explained that state has been divided into eight zones in order to speed up the code program. He urged the membership to support the code in every way, pointing out that unless master plumbers cooperate with the code authorities there is a probability that the government will step in and enforce the code.

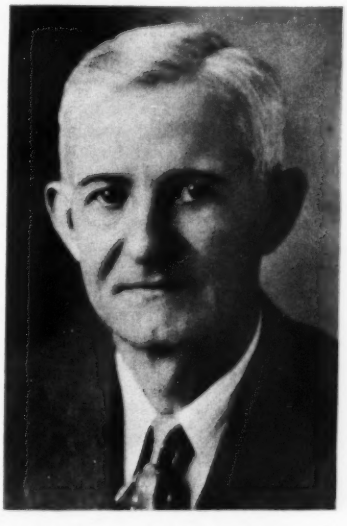
The committee in charge of the meeting was as follows: President Clarence Scull, Secretary J. Bateson, Irving Chew, Paul Eichfeld, John Emmel, Fred Schorpp, William J. Kelley and Henry Eichfeld.

"Sunshine State" Holds Lively Annual Convention

By James Douglas

Dignity, fellowship, patriotism and enthusiasm distinguished the state convention of the Associated Master Plumbers of New Mexico at the lively sessions held in El Fidel Hotel at Albuquerque on Saturday, March 9.

Front page write-ups in the local newspapers, and addresses by municipal and federal officials gave prestige to the assemblage. Mayor Charles Lembke, himself a contractor, gave to the delegates the "keys to the Duke City," and his cordial welcome gave an auspicious opening to the meeting. Outstanding



John Strumquist, state president

and impressive was the forceful address by Fred C. Rogers, state NRA compliance director, who came from the "ancient city of Holy Faith" (Santa Fe) to be a special guest and speaker.

The Blue Eagle was "among those present," and was chief honoree of the gathering. A few "doubting Thomases" who had come from remote towns in the sparsely settled oldest-newest state were, at first, hostile to the Blue Eagle. But these skeptics were converted, and looked on the royal fowl with appreciation and pledged allegiance to NRA before the time of adjournment in the wee sma' hours of Sunday morning.

Roy E. Butler, vice president

Presiding over the sessions was John Strumquist of Albuquerque, for three years president of the state association, and, since the advent of the Blue Eagle, state code executive for the plumbing and heating industry.

At the speaker's table sat the "lady plumber," Mrs. Wilhelmina Coe, state recording secretary, and a plumbing contractor. Mrs. Coe read many communications, among them lengthy telegrams of greetings and counsel from John J. Calnan of Chicago, president, National Association of Master Plumbers; Robert J. Barrett of Washington, D. C., executive director of the divisional code authority; O. T. Carson, president of Domestic Engineering, Charles J. Ormond, San Antonio, Tex., code director of the southern zone, and director of the N. A. M. P.

A resolution was adopted calling for

a state sanitary code to be passed by the state legislature which it is expected will be called in special session in April. Members appointed to draft a state code are: Victor Wagner, W. T. Cooper, E. C. Whisler, together with the state president and ex-officio member. Details of the city ordinance of Albuquerque, now under discussion and

William Beauchamp, secretary-treasurer

ready for passage, were presented as a model for local communities.

The state health director was petitioned to share in the drafting of the state sanitary code. Wide publicity given recently to the shocking infant mortality rate in New Mexico has prepared the public for reforms in health measures and sanitation, and it is expected the proposed code will be speedily enacted into law as a safeguard to health.

Mr. Strumquist spoke with telling effect on the hazards and handicaps of the ordinary contractor, who must compete with the billionaire electric and gas company. "It is a marvel that the small contractor can remain in business at all, contending with the unfair methods of the electric and gas company," Mr. Strumquist remarked.

It was noted by other speakers that President Roosevelt is engaged in the same fight, to "clear the way" of the big utility companies to give the small contractors a chance for "life, liberty and the pursuit of happiness." So deeply engrossed were the master plumbers in the deliberations that a scant hour and a half recess was allowed for the convention dinner at the hotel.

The Federal Housing Act opportunities were presented and discussed; the bid depository requirements, the need for a "gentleman's agreement" in a code of ethics between contractors; and a cooperative plan with the federal agents of the housing program.

A resolution of sorrow over the death of National Director R. G. Thomas of San Antonio, Tex., was adopted. A resolution also was adopted over the death of H. E. Miller, master plumber, of Las Vegas, who had written he would attend the convention two days before his death.

The election of ten directors to guide the affairs of the state association during the coming year resulted in the following being selected: John Strumquist; Jack Grant, Magdalena; William Crawford, Albuquerque; Thomas Cavender, Clovis; William Beauchamp, Albuquerque; W. A. Hoffman, Roswell; Roy E. Butler, Santa Fe; W. T. Cooper, Albuquerque; E. C. Whisler, Albuquerque, and B. O. Greenwade, Roswell.

In spite of his objection to the nomination, John Strumqust was unanimously re-elected to be president of the

Mrs. Wilhelmina Coe, retiring state secretary

association and chairman of the board of directors for the coming year. Other officers elected are: Roy E. Butler of Santa Fe, vice president; William Beauchamp of Albuquerque, secretary-treasurer.

Weary, but gratified, the annual convention adjourned at 1 a. m. Sunday morning to meet again next March. The Blue Eagle, with his wings spread wide in benediction, and not even one small tail feather plucked or ruffled, smiled a benign *"adios"* as the master plumbers dispersed.

[1]It will be quite obvious, even to the casual reader, that the author is a native son of the "Sunshine State."—EDITOR'S NOTE.

Oklahoma Masters Enjoy Covered Dish Dinner

The Master Plumbers Association of Oklahoma City, Okla., held its regular monthly meeting on Monday evening, March 4. An excellent covered dish dinner was served by the Women's Auxiliary. Following dinner, a short business session was held by both groups, after which bridge was played.

Philadelphia Celebrates Father-Son's Night

"Father and Son's Night" was celebrated by the Master Plumbers Association of Philadelphia in connection with the March meeting. President George M. Hicks presided. The success of the affair caused the members to decide to hold a "Father and Son's Night" annually.

Many sons were present with their fathers, some fathers being accompanied by as many as three sons. Hanging on the wall was a verse composed by Robert Hicks, son of President George Hicks. It read as follows:

"A toast to a Father who has a Son,
Who follows the business which he has begun,
May this proud Father, see his son's son
Practice this trade, ere his day is done."

William B. Walker, an official of the First National Bank of Philadelphia, gave an interesting talk on the FHA movement and explained how master plumbers can handle the financing of their jobs through his bank.

Yern Jorgenson, chairman of the touring committee, described briefly the plans that are being made in working out an itinerary for Philadelphians who are planning on attending the national convention in Chicago.

New York Chapter Hears Talks on Noise Prevention

The New York Chapter of the American Society of Heating and Ventilating Engineers held its regular monthly meeting Monday evening, March 18, in the Building Trades Club, New York City, with President Harry W. Fiedler in the chair.

R. H. Carpenter, the Chapter's Council member, reported on the Council's recent meeting in Buffalo. He emphasized the point that the committee on constitution and by-laws in its report to the Council made some comments on the procedure of the nominating committee, which were serious, extensive and worthy of consideration. Several changes from the present method were proposed in order to give all members fair representation. Following discussion by the members, President Fiedler appointed a committee of five consisting of W. H. Driscoll, Arthur Ritter, H. B. Hedges, W. W. Timmis, and R. H. Carpenter to study the various methods and report to the Chapter at the next meeting.

The first part of a two-feature program was a sound picture on the general subject of sound and noise prevention with an accompanying lecture by J. S. Parkinson, head of the Acoustical

Development Section of Johns-Manville. This film showed graphically the difference between sounds of high and low frequency and the difference in amplitude of sound. Mr. Parkinson also showed how noise is measured and the machinery used in these experiments. He said that a committee of the Society is now working on the problem of noise in an attempt to classify all types of heating and ventilating equipment, according to the type of sound it emits and the loudness of such sound, and in addition to set up maximum standards for the amount of noise permissible in a certain type of room. Knowing these two things the engineer will at once know how much noise he must eliminate.

The second speaker was Eugene Milener of the American Gas Association, who gave a resumé of the accomplishments of the gas industry in automatic heating and described the work which the Industrial Gas Section of A. G. A. has done in developing a summer conditioning unit that will absorb moisture for dehumidifying. It was the speaker's opinion that more installations of summer air conditioning can be satisfactorily supplied by dehumidifying the air than by mechanical cooling with dehumidifying as a by-product.

The nominating committee offered the following candidates for officers of the Chapter for the coming year: President, W. W. Timmis; vice president, G. E. Olsen; secretary, T. W. Reynolds; treasurer, W. N. Heebner; board of governors: H. W. Fiedler, A. F. Hinrichsen, and W. E. Heibel.

Six Local Associations Elect New Officers

The Association of Master Plumbers of the Rockaways, N. Y., has elected the following officers: President, Wm. McNaught; first vice president, Samuel Friedlander; second vice president, Albert W. Brons; secretary, George F. McGovern; treasurer, Peter M. Scott; marshall, Morris Baron; board of governers: Walter Hock, chairman; Thomas J. Nolan, David Mackler, Patrick A. McCauley, Jacob Goldberg, Frank J. Donnelly and Eugene Smith.

The Master Plumbers Association of Troy, N. Y., has elected officers as follows: President, Richard S. Healey; vice president, Thomas F. Daly; secretary and treasurer, Chester C. Johnston; trustees: Sanford J. Ryan, John T. Read and John P. Trainor.

The Master Plumbers Association of Binghamton, N. Y., has elected the following officers: President, T. J. Cronin; vice president, Arley W. Sweetland; secretary, Alex Auchinachie; treasurer, Charles Hakes.

The Master Plumbers' Association of Schenectady, N. Y., has elected officers as follows: President, Earl J. Harbison; vice president, Chester Day; treasurer, Charles Burch; secretary, Wm. D. Atkins; sergeant-at-arms, W. M. Clute.

The new officers of the Master Plumbers' Association of Albany, N. Y., are: President, Edward Daley; vice president, Peter Rubenstein; treasurer, Joseph Nicklas; financial secretary, George Decker; recording secretary, William Houseweller; sergeant-at-arms, Arthur Keller; trustees: A. J. Eckert, chairman; Thomas Thomson, Vincent Scovello, Anthony Deckler and Peter Welter.

The Master Plumbers' Association of Staten Island, N. Y., has elected the following officers: President, Wm. H. Ahrens; vice president, Philip Beyer; recording secretary, James J. Brady; financial secretary, George F. Morris; treasurer, John Missall; sergeant-at-arms, George W. Missall.

Chicago Masters Defeat Milwaukee in Bowling

The bowling team of the North and West Side Master Plumbers' Pleasure Club of Chicago again demonstrated its superiority over their fellow craftsmen from Milwaukee, Wis., in the annual bowling tournament between the two teams held at Medinah Athletic Club, Chicago, on March 21.

The score for the Chicago team was 2,530 to 2,513 for Milwaukee, giving the Chicago boys a margin of 17 pins. While the Milwaukee plumbers have won most of the tournaments which have been going on for the past twenty years, the Chicago boys were particularly happy in winning the tournament by such a small margin.

George Stoehr and Al Hoffman with a total score of 579 and 549, respectively, each bowled a game over 200. The high men for Chicago were E. C. Wagner, with 520, and Robert Nelson, with 517. Mr. Wagner was particularly pleased with his performance as it was not so very long ago that he was given the leather medal.

Witnessing the tournament were fifty-two master plumbers and supply men from Milwaukee and an equal number from Chicago. Following the bowling tournament those in attendance, including master plumbers and supply men, were the guests of the North and West Side master plumbers at a dinner at the Medinah Athletic Club.

At this event, William F. Hildeman of Chicago Heights ably performed the duties of toastmaster. Fred W. Sorge, president of the club, extended a welcome to the members from Milwaukee. Henry Weber, president of the Milwaukee Master Plumbers' Association, responded.

John J. Calnan, president of the National Association of Master Plumbers, congratulated the home team on winning the bowling match, commenting upon the wonderful spirit of cooperation which had been kept alive between the two cities for so many years. He thanked the Wisconsin association for the loyal support it had given him in responding to appeals made by the National association. He also spoke of the activities of the National association and extended all in attendance a cordial invitation to be present at the National convention to be held in Chicago at the Stevens Hotel, June 25-26-27.

Rupert J. Weber, chairman of the master plumbers divisional committee for the national convention outlined the program of entertainment and the educational features that would be held in connection with the convention and exposition.

William R. Brookman, secretary of the Illinois Master Plumbers' Association, Peter M. Munn, secretary of the Chicago association, H. E. Wegner, chairman of the entertainment committee of the Milwaukee association and E. C. Wagner of Chicago responded briefly on being recognized by the toastmaster.

Ed. Holscheisser of Milwaukee with a total score of 418 was awarded the leather medal. William E. Bahn, on behalf of the North and West Side Master Plumbers' Pleasure Club, distributed the prizes which were won by the following:

High Series

	Score
Geo. Stocher, Milwaukee	579
Ant. Boettcher, Milwaukee	563
Geo. Bronenkant, Milwaukee	538
A. Wolff, Milwaukee	556
E. C. Wagner, Chicago	520
Frank Pearson, Chicago	577
L. Markowski, Chicago	497
Zimmer, Chicago	505

High Individual

L. Hoffman, Milwaukee	210
H. Borkenhagen, Milwaukee	165
J. Savadil, Milwaukee	168
Henry Theis, Milwaukee	200
Edw. Young, Chicago	192
Paul Jacoby, Chicago	182
H. Crumm, Chicago	156
Harold Stift, Chicago	189

Most Consistent

Leo Hudin	179-179	158
Henry Weber	148-148	138
Stadelman	141-145	152
Litzow	149-157	167

A return match will be held in Milwaukee the latter part of April. The committee in charge of the tournament is as follows: Paul Grosse, chairman, William E. Bahn, Emil Otto, Emil Siegman, George J. Sanger, Herman Strauss and Henry Skibbe.

New Trade Literature

Technical Bulletin on Relief Valves

The Patrol Valve Company of Locust Avenue and West 114th Street, Cleveland, Ohio, has issued a bulletin on "Relief Valves," explaining what they are, how they operate, and why they should be installed on hot water supply systems. The bulletin consists of 4 pages, 8½x11 in. in size, and its last page is devoted to illustrations and descriptions of six of this company's temperature and pressure relief valves for domestic hot water supply systems.

New Booklet on Stainless Steel

Republic Steel Corporation of Massillon, Ohio, has just issued its booklet No. 125-A, containing the latest data on the various members of its family of stainless steels. An important feature of this 16-page, illustrated booklet is a table showing the corrosion-resistance exerted by three kinds of stainless steel in the presence of several hundred chemicals, solutions and other reagents.

De Luxe Booklet Features Hot Water Heaters

Lukens Steel Company of Coatesville, Pa., has issued a de luxe booklet entitled the "World's Largest Plate Mill and Its Products," which is a pictorial summary of the work of this company and its divisions, By-Products Steel Corporation and Lukenweld, Inc. Among the items illustrated and described are hot water heaters and storage tanks made from nickel-clad steel.

Woodward-Wanger Co.'s "Shop Talk"

Woodward-Wanger Company of Philadelphia, Pa., has issued a four-page circular, 8½x11 in. in size, entitled "Shop Talk," devoted to selling experiences, mostly on the part of journeyman plumbers. This circular records several cases where wide-awake journeymen succeeded in securing worthwhile remodeling and repair jobs for their employers.

Parker Appliance Co. Issues Bulletin No. 38

Parker Appliance Company of Cleveland, Ohio, has just issued its Bulletin No. 38, under the title of "Parker Valves." This bulletin consists of a booklet of 56 pages, 8½x11 in. in size, and it illustrates and describes the following products: Air vents, blow valves, blowdown valves, bypass valves, check valves, disk valves, drain cocks, fire extinguishers, flow indicators, gas and air mixer tees, globe valves, level indicators, manifolds, needle valves, plug valves, pressure indicator valves, pressure snubbers, relief valves, strainers, and water service valves. The booklet covers not only a typical variety of valves manufactured by this concern, but it also contains much valuable information as well as a large list of valve symbols and abbreviations.

New Catalog of Drinking Fountains

The Halsey W. Taylor Company of Warren, Ohio, has issued a 20-page catalog of Drinking Fountains and an 8-page catalog of Electric Water Coolers, illustrating and describing in detail this company's lines of these products. Among the features emphasized about these drinking fountains are: 1, Automatic stream control by the aid of a device which maintains a constant height in the drinking stream even though the line pressure may vary 50 lb.—2, Ideal drinking mound, a two-stream projector that makes the side stream practical.—3, Absolute sanitation, the drinking mound being formed by the conveying of two streams of water, thus setting up an interference forming a localized drinking mound which makes it impractical to drink from any other point, and therefore absolutely sanitary. The finger or lips cannot come in contact with or contaminate the source of supply. The fountain and fittings listed are: Wall fountains, pedestal fountains, combination cooler and drinking fountains, non-automatic fountains, fountain heads, automatic control heads, fittings and self-closing stops. The catalog of Electric Water Coolers also stresses the points that these units have automatic stream control and two-stream projector.

Keys to the Home Modernization Markets

The Ruberoid Company of 500 Fifth Avenue, New York City, manufacturers of asbestos insulating materials for low and medium pressure lines, has just issued an exceptionally attractive FHA sales presentation under the title of "Seven Keys to Open the Way for Your Share of the Home Modernization Market, Created by the National Housing Act." The size of the book is 10¾x13¾ in., and it is divided into seven sections as follows: 1, Deferred payment plan at government rates.—2, National advertising.—3, Direct mail advertising.—4, Dealer sales aids.—5, Local newspaper advertising.—6, Profit-building products; and 7, Service. Samples of many free mailing pieces are included. Attention is also directed to the company's line of products, including 85% magnesia and high temperature pipe coverings and blocks, asbestos and magnesia cement, asbestos paper, asbestos roll board and mill-board.

New Catalog of Malleable and Brass Fittings

Stanley G. Flagg & Co., Inc., of Philadelphia, Pa., have just issued their catalog "Fifty-Seven," consisting of 178 pages, 6¼x9¼ in., and containing descriptions and illustrations of their malleable iron, cast iron and red brass fittings, including screwed fittings, elbows, tees, crosses, reducers, couplings, caps, return bends, locknuts, extension pieces, unions, union elbows, ground joint unions with or without bronze end or bronze nut, ground joint union elbows, railing fittings, refinery flange unions; cast iron companion flanges; brass nipples, steel nipples; fuel oil and gasoline storage tank fittings, caps, nozzles, plugs, nipples, boiler stand tees, and concrete hangers. A carefully prepared index makes this catalog handy for reference.

Practical Everyday Chemistry

"Practical Everyday Chemistry" is the title of a book, which has just been issued under the editorship of H. Bennett, F. A. I. C., containing hundreds of formulas concerning the compositions or methods of making adhesives, alloys, antifreezes, antiseptics, cements, colors, disinfectants, drugs, extracts, insecticides, soaps and cleaners, stain removers, and varnishes, etc. Late and accurate information about these and many other compositions can be found in this book, which is published by The Chemical Publishing Company, 1450 Broadway, New York City, at $2 per copy, bound in green cloth.

New Swimming Pool Catalog

Blake Specialty Company of Rock Island, Ill., has just issued a 16-page catalog, size 8½x10⅝ in., illustrating and describing in detail its swimming pool drains and fittings of every character, including swimming pool floor and inlet drains, vacuum connections, inlet and outlet connections, scum gutter drains, floor and pool bottom drains, and swimming pool main outlet drain with safety pan. Photographs and designs of several swimming pools, in which these drains and fittings are used, are also included in this cata-

log. One of these designs is for a 20x60 ft. pool, which is at present almost a standard for pools built both indoors and outdoors where space is limited. The depths of swimming pools vary to suit the conditions of the bathers. The catalog also brings a large amount of information about the arrangement of piping for swimming pools, water supply, sewer connection, vacuum piping, filtration, heating, and sterilizing by the ultra violet ray process, the ozone process, and the chlorine process. A carefully compiled index makes this catalog very convenient for quick reference.

Folders Feature Unions and Nipples

Thomas Devlin Manufacturing Company of Burlington, N. J., has issued several small folders featuring its malleable iron fittings, galvanized wrought steel nipples, and its malleable iron unions with brass-to-iron ball and socket joint. Special attention is also called to the company's brass union, which is described as dependable in any installation being made of heavy red brass, with full ball and socket joint, accurately aligned, guaranteeing a perfect seal which can be used over again.

New Edition of Twentieth Century Formulas

The 1935 edition of "Henley's Twentieth Century Book of Formulas, Processes and Trade Secrets," has been issued under the editorship of Prof. T. O'Conor Sloane. This new edition has many new features in addition to the standard formulas. For one thing, a very complete classified buyers' finding list has been added, so that readers experimenting with formulas will know where they can obtain needed supplies. Another excellent addition is a section explaining, non-technically, the composition of hundreds of chemical substances called for in the formulas in this book. The formulas themselves have been carefully revised. The latest methods and trade practices have been included, and many sections are composed of entirely new material. The scope of the book is so extensive that both professional workers and amateurs will find it very valuable. There are 10,000 different formulas for all sorts of things for the householder, farmer, mechanic, and laboratory worker. There is also a very complete, cross-referenced index and a plainly written section on laboratory methods. The book consists of 810 pages, 5½x8½ in. in size, and costs $4, prepaid, attractively bound in durable cloth. It is obtainable from the publisher, The Norman W. Henley Publishing Company, 2 West 45th Street, New York City.

Price Is Reduced of Manual on Pipe Welding

In order to make the "Standard Manual on Pipe Welding" available to the largest possible number of heating and piping contractors and journeymen employed by them, the Heating, Piping and Air Conditioning Contractors National Association, 1250 Sixth Avenue, New York City, recently reduced the price and it can be had now at $1.50 per copy. The "Standard Manual on Pipe Welding" is a standard authoritative work. It contains the latest and most up-to-date practices in the pipe welding field. It includes the Specifications and Standards Covering Welding of Steel and Wrought Iron Pipe. It contains a series of job sheets giving step-by-step procedures to be followed in typical welding jobs which cover every possible process to be found in pipe welding. The volume of 280 pages is well illustrated and attractively bound in flexible fabrikoid.

At His First Convention

To the Editor:

As a Plumber, I chose to do my life's work.
I started in young, no job did I shirk
I learned all I could and I studied at night,
I was happy in thinking, my future was bright.

I worked with the tools for ten years or more.
Learned to read plans, and draw charts on the floor.
I didn't mind working, being kept on the hop,
I had visions that some day, I'd own my own shop.

I opened a shop right down on Main street
Fixed it all up, and it surely looked neat
With building a-booming, I made money alright,
Had journeymen working, from morning till night.

A real Master Plumber, I felt some elation
When they asked me to join the Association
A convention was held in a city up state
And I was selected, as their delegate.

Arriving up there, I was ready to cheer
For I knew that real wisdom from others I'd hear.
Imagine my horror, to hear the first speaker shout
"The poor Master Plumber is on the way out."

He told of five years he had seen in the past,
And delared, "We are through, we surely can't last."
He told of the Gyps, and the Mail Orders too.
And said, "We'll be wrecked by the blamed D. T. U."

He said that the jobber has us by the throat
"He is robbing us blind, and we are the goat."
He spoke of conditions, deplorably bad,
In the business I'd loved, since I was a lad.

I was startled and stunned and doubted my ears
When that buzzard finished, they applauded with cheers
I soon had good reason to doubt that applause.
The next man to speak, was strong for the cause.

A snappy old Master and loyal clear through
Standing up for the Plumber, to him, wasn't new,
He was proud of his calling and straight from the heart
Said "The real Master Plumber has just got a start."

He wasn't afraid of the D. T. U.
And he had a good word for the jobber, too.
He said, "We'll succeed, we've done it before,"
The good Master Plumber is worth more and more.

Since that first convention, I've seen many more,
There is always a buzzard who'll get on the floor,
To declare that "The poor Master Plumber is dead"
My opinion of him can never be read.

I've found that most Plumbers are really quite queer,
They will let some gink knock them, then give him a cheer.
When it comes to real Fellows they are loyal and true,
They stand all together, and stick there like glue.

(Signed) Rambling Rhymester.

SMART DOLLARS

buy **MORE** *than*

IRON *and* **BRASS**

First of all, you insist on getting your dollar's worth of fittings and nipples.

But, as a careful buyer, you look beyond the number of pieces of iron and brass in your bins. You want your merchandise to contribute to the honesty and good will of your business. You buy more than merchandise.

You buy dependability. It is a quality which keeps your old friends and makes new ones. In fittings and nipples, it means installations made in record time without waste of material. It means installations which don't spring leaks after the pressure is turned on. It means one less thing to gamble on and worry about.

Dependability is built into Devlin Fittings and Nipples as surely as is the size and style and material. It has caused our business to grow steadily on a firm basis — and it will do that for yours, also.

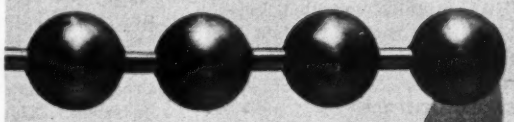
For dependability, be sure to

specify **DEVLIN**

FITTINGS IN MALLEABLE IRON, CAST IRON, AND BRASS
NIPPLES IN STEEL, WROUGHT IRON, BRASS AND COPPER

THOMAS DEVLIN MANUFACTURING CO.
Incorporated
BURLINGTON, N. J.

Spring Renovations



SUMMER hotels, boarding houses, cottages — this is the time of year to recommend BEAD CHAIN* for freshening up old fixtures and replacing missing parts. Don't let the painter and carpenter get all the Spring renovation jobs. Plumbing is important, too.

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WOMEN'S ACTIVITIES

By DOROTHY EDWARDS

Wisconsin Auxiliary Names Directors and Committees

At a state board meeting held at Racine recently, the following were chosen for the board of directors of the Wisconsin Women's Auxiliary: Mrs. F. C. Kuetemeyer, Mrs. Charles Pelunek, Mrs. O. A. Waskow, Mrs. Edwin Thill, Mrs. Jacob Schuh, Mrs. H. C. Weber, Mrs. O. H. Dittmer, Mrs. A. A. Hoffmann, Mrs. Charles W. Priegel, Mrs. George J. Bronenkant and Mrs. George Stoehr, all of Milwaukee; Mrs. Joseph Vowinkel, Sheboygan; Mrs. John Van Oss, Green Bay; Mrs. John Feiner, Mrs. F. H. De Longe, Mrs. Nels Holgard and Mrs. John Dickert, all of Racine.

The following were appointed to committees: Mrs. David Stern, Milwaukee, chairman of arrangements; Mrs. George Stoehr, Milwaukee, reception; Mrs. A. A. Hoffmann, Milwaukee, entertainment, and Miss Clara J. Wittig, Milwaukee, publicity.

Thanks Auxiliary for Aid from Loan Fund

Auxiliary members who have been working hard to support the Women's Auxiliary Memorial Educational Fund will be encouraged to continue their efforts after reading the letter published below. They will better realize that their good work is appreciated by the student beneficiaries, all of whom are daughters of master plumbers.

Mary VanHoomissen, who writes the letter, is studying architecture at the University of Oregon, and is one of the six student beneficiaries under the Fund. She expresses her appreciation for the Auxiliary's assistance in a letter addressed to Mrs. E. D. Hornbrook of Kansas City, Mo., treasurer of the Fund. The letter follows:

"Dear Mrs. Hornbrook:

"I should like to express my appreciation for your having given my petition so much attention last September when Mrs. Rennie sent it to you. I also wish to apologize for not writing to you before this time.

"As you know I am studying architecture at the University of Oregon, and I am enjoying it thoroughly. My grades for last term were slightly above average so I feel that I am not assuming too much in working in this field commonly held by men. There are only two other girls in the department. I have two courses in history in addition and last term I took a one-term course in business English.

"Though I shall return the loan the Auxiliary so kindly made me I feel immensely indebted to them for much more than the money; the chance to realize the hopes of my lifetime is something I can never repay.

Yours sincerely,
Mary VanHoomissen."

Kansas State Auxiliary Holds Annual Meeting

The Women's Auxiliary to the Kansas Master Plumbers Association held its annual meeting at the Jayhawk Hotel, Topeka, March 11 and 12. The following officers were elected:

Mrs. R. P. Johnson, Wichita, president; Mrs. B. A. Sutton, Iola, first vice president; Mrs. K. W. Talbott, Pratt, second vice president; Mrs. Charles Simmons, Kansas City, third vice president; Mrs. Carl McGregor, Winfield, treasurer; Mrs. H. P. Dunaway, Wichita, corresponding secretary; Mrs. William Ball, Kansas City, recording secretary; Mrs. K. W. Sawyer, Hutchinson, historian.

Left to right: Mrs. R. P. Johnson, Wichita, new Kansas state president, and Mrs. H. P. Dunaway, state secretary

Marks Tenth Anniversary

The Women's Auxiliary to the Master Plumbers Association of Mansfield, Ohio, celebrated its tenth anniversary recently.

Philadelphia Auxiliary Elects 1935 Officers

The Women's Auxiliary to the Philadelphia Master Plumbers has elected the following officers to serve for the year 1935: Mrs. Frank Stratton, president; Mrs. C. Jann, vice president; Miss E. K. Jann, secretary, and Mrs. J. Seibel, treasurer.

The following were elected for the board of directors: Mrs. George Diggins, Mrs. Emma Henderson, Mrs. George Wismer, Mrs. Robert Pflug-Felder, Mrs. Kenneck.

The new president, Mrs. Frank Stratton has appointed the following committees: Membership, Mrs. Robert Pflug-Felder, Mrs. Fred Kenneck and Mrs. C. Jann; publicity, Mrs. C. Jann and Mrs. M. Hendricks, flowers, Mrs. William Beahm; sick, Mrs. E. Quaid, Mrs. James Soehle and Mrs. Wismer.

Queensboro Auxiliary Plans Card Party

The March meeting of the Women's Auxiliary of Master Plumbers, Queensboro (N. Y.) Branch, was held at the Knights of Columbus Hall in Jamaica, Long Island. Plans were discussed for a card party to be held in May at Tillsons' Amber Lantern, Flushing.

Refreshments and entertainment followed the meeting. There will be a short entertainment at the close of each meeting hereafter.

Rock Island and Moline Women Hold Meetings

The March meeting of the Women's Auxiliary of the Master Plumbers' Associations of Rock Island and Moline, Ill., was held at the Swanson Tea Room in Rock Island. Bridge followed the business session, high scores going to Mrs. C. C. Rosenfield, Mrs. E. L. Householder and Mrs. Albert Rosenfield. Refreshments were served.

The April meeting will be held on the 15th at the home of Mrs. C. C. Rosenfield, Rock Island.

The February meeting was held at the home of Mrs. Albert Rosenfield, Rock Island, president of the auxiliary. Refreshments were served from a Valentine decorated table.

Kansas City Women Plan for State Convention

Mrs. E. D. Hornbrook, president of the Women's Auxiliary to the Association of Master Plumbers of Kansas City, Mo., presided at the regular March meeting, which was held in the home of Mrs. Charles Herold.

Plans for the organization of a Junior Auxiliary were presented by the president for consideration and much interest was displayed in the project.

Several new members were added to the auxiliary and more are expected.

At request of the master plumbers association, the auxiliary met on March 18 to discuss plans for entertainment at the state convention. It was decided to include a musical tea for the ladies, to be given at the home of Mrs. Hornbrook whose gracious hospitality will be well remembered by former visitors to Kansas City.

Racine Auxiliary Met Recently at Home of Mrs. O. Beetcher

The Women's Auxiliary to the Master Plumbers Association of Racine, Wis., held its regular monthly meeting Thursday afternoon, February 21st, at the home of Mrs. Otto Beetcher. The business was quite brief. Following this, cards were enjoyed by some of the members, and other entertainment by others. Refreshments were served by the hostess. It was announced that the next meeting will be held at the home of Mrs. Frank De Longe.

Many Notables Attend Albany Auxiliary Party

A Washington's Birthday Party, following the regular meeting of the Albany and Rensselaer (N. Y.) Women's Auxiliary, was held at the home of Mrs. Adam Roos on February 21.

At the meeting a committee was appointed to purchase a new gavel for use at the meetings, and another committee to buy a gift to be presented at the fiftieth anniversary dinner of the Master Plumbers' Association of Albany.

Mrs. William Dugan, chairman of the Sanitation Committee, named Mrs. J. Micklas, Mrs. P. Welter and Mrs. Shepherd as co-workers.

Many masters were present, including the following out-of-town guests: George Frank, national vice president; Arthur Ritter, past state president and Paul Clucas, past state secretary, all from Buffalo; New York State President William Foley, State Secretary N. Donohue, and State Treasurer A. George Arnone and Mr. Bender, all of New York City; Mr. Cronin of Binghamton.

The members of the auxiliary were guests at the fiftieth anniversary dinner-dance of the Master Plumbers Association of Albany, at Woolferts Roast. The association was presented with a check for $50, a dollar for every year of its existence.

Maine State Auxiliary Holds Annual Meeting

The Women's Auxiliary to the Maine Master Plumbers Association held its annual convention at the DeWitt Hotel, Lewiston, on March 12 and 13.

The following officers were elected for the ensuing year: Mrs. Herbert Parent, Lewiston, president; Mrs. Charles Downey, Bangor, vice-president; Mrs. Annie Madsen, Portland, secretary; Mrs. Florence Cunningham, Portland, treasurer.

Top row, left to right: Mrs. Wilbur Blake, Portland; Mrs. H. Parent, Lewiston, president of Maine auxiliary; Mrs. Ernest Cunningham, Portland, state treasurer. Lower row: Mrs. Charles B. Downey, Bangor, state vice president; Mrs. Iver Iverson, Portland; Mrs. C. Madsen, Portland, state secretary

Trenton Elects Officers

The election of officers of the Women's Auxiliary to the Master Plumbers' Association of Trenton, N. J., took place recently at the home of Mrs. Charles MacQueen. The election results were: president, Mrs. John Conard (re-elected); vice president, Mrs. William G. Royer, Sr.; treasurer, Mrs. Charles MacQueen (reelected); secretary, Mrs. William J. Lee (re-elected); sergeant-at-arms, Mrs. Fred L. Nitz (reelected); trustees: Mrs. Frank R. Dunn, Mrs. John B. B. Wouters and Mrs. Emil L. Pfleider; publicity, Mrs. J. Miller Heidweiler.

Bronx Group Appoints Sanitation Chairman

Miss Alice Roth, second vice president of the New York State Women's Auxiliary, was appointed local chairman of the Sanitation Investigation Committee by the Bronx Auxiliary at its meeting on February 26. All activities along the Sanitation line will be under her supervision.

At the same meeting the following new officers recently re-elected were installed by Miss Roth: President, Mrs. Woodward Ebner; vice president, Mrs. S. George Arnone; treasurer, Mrs. Anthony Platt; corresponding secretary, Mrs. Henry Kropeke; recording secretary, Mrs. Theresa Grant. Miss Roth is the publicity chairman for the coming year.

The members were joined by the masters at the conclusion of a short meeting, and all attended a dinner dance at the Pelham-Heath Inn in Westchester.

Boston Auxiliary Elects New Officers

Officers for the ensuing year were elected at the March 19 meeting of the Women's Auxiliary to the Master Plumbers' Association of Boston. The results were: Mrs. Caroline McAuliffe, president; Miss Mary McKenna, vice president; Mrs. Theresa Curtin, treasurer, and Miss Emily Donoghue, secretary.

The meeting was well attended by the members and their guests. Dinner was served in the Grille Room of the Hotel Lenox. Mrs. Marcella Rose entertained the group with several piano selections while many joined in singing.

Manhattan Increase Its Charity Funds

Mrs. John F. Birch entertained the members of the Borough of Manhattan (New York City) Women's Auxiliary at her home at the meeting in February. After an enthusiastic session, a delightful social hour was enjoyed.

At the election of officers, Mrs. Birch was chosen to fill the office of vice president while the other officers were reelected as follows: President, Mrs. John Sharp; treasurer, Mrs. Fred Miller; secretary, Mrs. Herbert Halloran.

The members have just completed an afghan which will be offered for sale at the next meeting, and the receipts for which will be used to increase the auxiliary's donations for charity.

This is the way the plumber spells CONFIDENCE

Trained in the school of experience, the plumber is taught to associate the name of KOVEN with a product in which he can place his full confidence.

The KOVEN organization has never let the plumber down by offering any substitute for quality.

Made in an up to the minute plant by skilled workmen—every product is backed by the KOVEN reputation.

Among the many KOVEN products:

RANGE BOILERS
Galvanized or Copper
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STANDARD DUPLEX HEATERS

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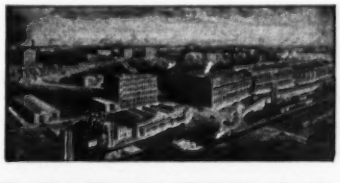
WE DO OUR PART

STORAGE TANKS
Steel or Copper
FUEL OIL TANKS
EXPANSION TANKS
PNEUMATIC TANKS
SEPTIC TANKS

Insist on the best by asking for KOVEN products from your jobber.

Send for the 1935 Hand Book



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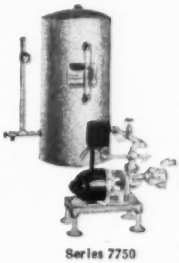
SAFE To Install Where Children May Play!

YOU can (if necessary) install a Burks' Super Turbine Pump for the home in the playroom of the children without any danger to them. No moving parts exposed on a Burks.

What a Pump to sell!

No belts! No gears! No valves! No plungers! No leathers! No springs! No cranks! No pistons! Just one moving part and it is concealed!


Series 7750

This Safety feature alone is enough in itself to meet any kind of competition. When you offer Burks Pumps you are not competing with the mail order type of pump. You have features to talk about in a Burks Pump that you do not find in other types of pumps. You make more money too.

NEVER MISSED an hour in 11 years use

"I have been selling Burks Pumps for eleven years. In August, 1925, I installed a Burks Pump in my own home furnishing water for store and house. Never has missed one hour on account of Pump. I have never had any trouble with any Burks Pump I have ever installed. All my customers are highly pleased."

March 8, 1935—C. A. Kelly, Dealer, Sadorus, Ill.

TROUBLE-FREE — UNIVERSAL SATISFACTION

Series 8750

"We cannot refrain from advising you of the universal satisfaction the Burks Pump has given us in a variety of uses in domestic water supply and particularly in some trying conditions when used as condensation return pumps. It is indeed a pleasure to find a manufacturer who will not sacrifice quality and performance for a price demand. It is indeed gratifying in these times to be able to turn to a piece of equipment that has dependable service and quality.

"It is our hope to continue in the contracting game long enough to install many more of these trouble-free units. We think your policies are deserving of this expression of satisfaction." March 7, 1935, C. D. Brownell, The Reliable Plbg. & Htg. Co., Champaign, Ill.

Special sales help for dealers. Write today for complete information. You can make more money with the Burks line.

Decatur Pump Company
DECATUR ILLINOIS

BOILING WATER

Santa Monica Women Elect New Officers

The Women's Auxiliary to the Master Plumbers' Association of Santa Monica, Calif., met recently at the home of Mrs. L. H. Tyler, electing the following officers for the ensuing year: President, Mrs. E. R. Keller; vice president, Mrs. W. H. Matheson; secretary, Mrs. M. V. Hemsley; treasurer, Mrs. W. Wilmont; auditors, Mrs. A. E. Wales and Mrs. J. R. Vowder; publicity, Mrs. C. H. Berger; and flowers, Mrs. L. H. Tyler.

Mrs. R. V. Fisher was elected chairman for the state convention, to be held in May at Santa Monica.

A series of card parties is now being planned by the auxiliary.

Minneapolis Celebrates Ninth Anniversary

The Women's Auxiliary to the Minneapolis Retail Plumbers' Association celebrated its ninth anniversary recently with a dinner followed by cards and dancing.

Mrs. Hugo Guntzel, chairman of the arrangements committee, was assisted by Mrs. H. M. Porter, Mrs. George Shoppe, Mrs. Martin Jensen, Mrs. P. G. Gleason, Mrs. D. B. Miars, Mrs. J. D. Keefe, Mrs. A. Sachs, Mrs. Emil Nordberg, Mrs. A. E. Harrow, Mrs. Hugh Fox.

Following are the officers for the ensuing year: Mrs. Victor Beaudry, president; Mrs. A. M. Wintheiser, first vice president; Mrs. Royal Berg, second vice president; Mrs. Otto Nelson, third vice president; Mrs. H. C. Harvey, secretary; Mrs. Frank Lamson, treasurer. Committees: Mrs. Hugh Fox, social chairman; Mrs. Hugo Guntzel, chairman of circle No. 1; Mrs. Arnold Bing, chairman of circle No. 2; Mrs. Walter Bell, chairman of circle No. 3; Mrs. Royal Berg, publicity chairman; Mrs. Frank Lamson, Mrs. A. G. Nelson, and Mrs. A. Sachs, telephone chairmen; Mrs. A. M. Wintheiser, membership chairman; Mrs. H. M. Porter, sunshine chairman; Mrs. Harvey Strader, 5th district federated club chairman.

South Side Auxiliary Reelects Officers

Chicago's South Side Women's Auxiliary met recently at the Broadview Hotel. Hostesses were Mrs. Walter Compton, Mrs. Fred Hager, Mrs. John Khym and Mrs. Charles Watson.

After the luncheon, the regular order of business was taken up, followed by the election of officers, which resulted in the present officers being reelected for another term. They are: president, Mrs. W. Compton; vice president, Mrs. J. Delehant; secretary, Mrs. J. Guldan; treasurer, Mrs. C. Haigh.

Progressive card parties in the members' homes have netted the auxiliary $31. The members are to pay 50 cents at each meeting for lunch instead of having hostess' fees as heretofore.

Brooklyn Women Start Sanitation Campaign

At the meeting on March 11 of the Brooklyn (N. Y.) Auxiliary, announcement was made that hearty cooperation in its Sanitation Investigation work had been promised by two local officials and that activity along this line would start at once.

The following officers were again reelected for the coming year: President, Mrs. M. J. Kennedy; vice president, Mrs. M. J. Hayden; secretary, Mrs. H. D. Jost; treasurer, Mrs. J. U. Linberger.

It was voted to endorse the present state officers for reelection at the forthcoming state convention.

The annual charity bridge party will be held at the Elks Club on May 4.

Denver Auxiliary Holds Enjoyable Party

At a recent meeting of the Women's Auxiliary to the Denver Master Plumbers' Association, Mrs. J. J. Laverty was hostess at a luncheon served at the Blue Parrot Inn. A card game followed the meeting, Mrs. S. Slattery, Mrs. Richard Hurley and Mrs. Vincent Kandorf taking honors.

On March 2 an evening party was held at the home of Mr. and Mrs. J. P. Brickey, honors going to Mrs. Robert Demmer, Mr. A. J. Adshade, Mrs. C. R. Cooper and Mr. F. X. Kreidl.

The following attended this evening party: Mr. and Mrs. C. R. Cooper, Mr. and Mrs. Robert Demmer, Mr. and Mrs. J. J. Laverty, Mr. and Mrs. V. A. Kiser, Mr. and Mrs. Kreidl, Mr. and Mrs. Vincent Kandorf, Mr. and Mrs. Harvey Mellema, Mr. and Mrs. W. F. Monthei, Mr. and Mrs. Carl Thurston, Mr. and Mrs. E. B. Clayton, Mr. and Mrs. Stocking, Mr. and Mrs. Richard Hurley, Mr. and Mrs. F. X. Bordeau, Mrs. Hensler, Mrs. Fryberger, Mrs. S. Slattery and Mr. A. J. Adshade. Refreshments were served after the game.

The Sanitation Route as Viewed by Auxiliary Leaders

Inspiration

A glance through the records of the National Women's auxiliary and its numerous branches in states and cities throughout the country, convinces me that it has indeed fulfilled all of the objectives laid down in its Constitution and By-Laws—cooperating with and aiding the N. A. M. P. and honoring the memory of deceased members, as well as along historical, benevolent, educational and social lines, even during the depression years.

However, it was not until this last year that the National Auxiliary attempted to launch a nation-wide campaign to "further the cause of sanitation." Of course I'm referring to the Sanitation Investigation activity, adopted at the national convention in Washington in May, 1934. This, I feel, was a big forward step and should be far-reaching in its scope and offer larger opportunities for further work by the auxiliary.

As explained in the address by Mary T. Stevens, delivered at the convention, in which she pointed out the advantages and possibilities of this sanitation work, this activity requires no extra expenditure of time, money or energy to conduct. Therefore, every auxiliary, regardless of number of members or size of community in which it is located, could and should follow up this work.

There is every reason to believe that our Women's Auxiliary is the logical organization to undertake this work. Our knowledge of the dangers of insanitary conditions gives us authority to protect our neighbors' health by urging improvement in public rest rooms. Thus, we are benefactors in the community, as we are endeavoring to better conditions along a line with which we are most familiar. Then, too, when replacements are made in one of these rest rooms, a plumbing contractor will get the job—your husband or my husband may be the lucky one. And all the time we are furthering the cause of sanitation.

What have you done? What are you doing? What are you planning? This is a big, serious job and there is little excuse for delay in starting. Remember, this year at our convention we'll see the reports of this first year's work. May the National Women's Auxiliary be proud of these records on this commendable work.

MRS. ROBERT LISS,
President, Women's Auxiliary, N.A.M.P.

Camden County Masters Hold Interesting Meeting

The Camden County (N. J.) Master Plumbers Association held its March meeting at the Walt Whitman Hotel, with President Clarence Scull presiding.

Secretary J. Bateson read the report of Irving Chew, Haddonfield, on the recent quarterly meeting of the New Jersey State Association of Master Plumbers. Mr. Chew was unable to be present.

Following the business meeting, the members were entertained with an educational motion picture through the courtesy of the John Wood Mfg. Co., Conshohocken, Pa., showing the manufacture of range boilers. The members were guests of the John Wood company at a buffet luncheon following the movie. Earl Fries and M. W. Piersol, represented the John Wood Mfg. Co.

Death of Frank O'Shea

Frank O'Shea, for the past 22 years employed as heating and power engineer for H. P. Reger and Company, 1501 E. 72nd Place, Chicago, died recently at his home, 6805 Greenview Avenue, after an illness of two months. His death was due to heart trouble. Mr. O'Shea, who was 65 years old, is survived by his widow.

New Contractors and Incorporations

Milwaukee, Wis.—G. E. Eubanks has opened a plumbing and heating establishment at 1725 North Sixth Street.

San Francisco, Calif. — Williams, O'Neil & Nicera have opened a heating business at 1341 Golden Gate Avenue.

Redmond, Ore.—Edward Povey, W. T. Povey, Theodore Povey and Clair Mellinger have opened a plumbing and heating establishment here.

Empire, Ore.—George W. Mellville has engaged in the plumbing and heating business under the name of Empire Plumbing and Heating Company.

Long Beach, Calif. — The Pacific Plumbing Company has opened a plumbing and heating business at 714 Orange Avenue, under the management of Harold Leroy Dunwoody.

Portland, Ore.—The E. A. Shea Company, Inc., has been incorporated with a capital of $5,000, to conduct a plumbing and heating business. The incorporators are H. G. Davis and E. A. Shea.

Tulsa, Okla.—The Watt Plumbing & Air Conditioning & Electric Company has been incorporated with a capital of $20,000. The incorporators are O. G. Watt, Edwin Jones and others.

Detroit, Mich.—The Central Heating Company has started in business with offices at 615 Ford Building.

Louisville, Ky.—Chagnard Plumbing and Heating Co., Inc., has succeeded the business of the Crescent Plumbing and Heating Co. in the engineering, contracting and distribution field. Air conditioning and refrigeration now receive attention in special departments. Maurice Chagnard is at the head of this company.

Pasco, Wash.—The Twin City Plumbing and Heating Company is making arrangements to open a business here, under the management of L. W. Jayne.

Seattle, Wash.—The Madison Hardware & Plumbing Company has started in business at 1403 East Madison Street, under the management of Robert Ziebarth.

Portland, Ore.—The Urban-Sinnott Plumbing & Heating Company has moved its business from 1227 S. W. Fifth Avenue to 1217 S. W. Fifth Ave-

Convention Dates

April 2-3.—N. O. B. D. A.—Annual convention of the National Oil Burner Dealers Association, in New York City, at the Hotel Pennsylvania.

April 8.—ALABAMA.—Annual convention of the Alabama Association of Master Plumbers, in Birmingham, Ala.

April 8. — ARKANSAS. — Annual convention of the Arkansas State Master Plumbers Association, in Little Rock, at the McGehee Hotel.

April 8-9.—A. O. B. A.—Twelfth annual convention of the American Oil Burner Association, in Atlantic City, N. J.

April 8-9.—WEST VIRGINIA.—Annual convention of the Association of Master Plumbers of West Virginia, in Bluefield, at the West Virginia Hotel.

April 9-10.—MICHIGAN.—The annual convention of the Michigan Master Plumbers' Association, in Flint, at the Durant Hotel.

April 15-16. — COLORADO. — Annual convention of the Colorado Society of Sanitary and Heating Engineers, in Denver.

April 22-23. — OKLAHOMA. — Annual convention of the Oklahoma State Master Plumbers' Association, in Clinton, at the Calmez Hotel.

April 22-23. — TEXAS. — Annual convention of the Associated Master Plumbers of Texas, Inc., in Fort Worth, at the Blackstone Hotel.

April 24-25.—C. S. A.—Spring meeting of the Central Supply Association, in Chicago, at the Morrison Hotel.

April 29-30.—MISSOURI.—Annual convention of the Missouri State Association of Master Plumbers, in Kansas City, at the Muehlbach Hotel.

April 30.—MASSACHUSETTS.—Annual convention of the Massachusetts State Association of Master Plumbers, in Boston, at the Copley Plaza Hotel.

April 30-May 1. — NEW YORK. — Annual convention of New York State Association of Master Plumbers, in New York City, at the Hotel Pennsylvania.

May 4.—IDAHO.—Annual convention of the Master Plumbers of the State of Idaho, in Idaho Falls, at the Bonneville Hotel.

May 6-7.—FLORIDA.—Annual convention of the Florida State Association of Master Plumbers, in Orlando, at the Angebilt Hotel.

May 6-8.—INDIANA.—Annual convention of the Indiana Association of Master Plumbers, in Indianapolis, at the Claypool Hotel.

May 13-14. — KENTUCKY. — Annual convention of Kentucky State Association of Master Pumbers, in Lexington, at the Phoenix Hotel.

May 14.—SOUTH CAROLINA.—Annual convention of the South Carolina Master Plumbers Association, in Anderson, at the Union Hall.

May 15.—E. S. A.—Spring meeting of the Eastern Supply Association, in New York City, at the Hotel Astor.

May 15-18. — NEW JERSEY. — Annual convention of the New Jersey State Association of Master Plumbers, Inc., in Jersey City, at the Plaza Hotel.

May 20.—TENNESSEE.—Annual convention of the Associated Master Plumbers of Tennessee, in Nashville.

May 20-22. — PENNSYLVANIA. — Annual convention of the Pennsylvania State Association of Master Plumbers, in Harrisburg, Pa., at the Penn-Harris Hotel.

May 20-22.—H. P. A. C. C. N. A.—The 46th annual convention of Heating, Piping and Air Conditioning Contractors National Association, in Cincinnati, Ohio, at the Hotel Gibson.

May 20-23. — CALIFORNIA. — Annual convention of the State Association of Master Plumbers of California, in Santa Monica, at the Miramer Hotel.

May 24-25.—WASHINGTON. — Annual convention of the Association of Master Plumbers of the State of Washington in Port Angeles, at the Elks Club.

June 11-14.—N. D. H. A.—Annual convention of National District Heating Association, in Philadelphia, Pa., at the Bellevue-Stratford Hotel.

June 25-27.—N. A. M. P.—The 53rd annual convention of the National Association of Master Plumbers, in Chicago, at the Stevens Hotel.

August 6.—VERMONT.—Annual convention of the Vermont State Association of Master Plumbers, Inc., in Montpelier, at the City Hall.

October 14-18.—A. G. A.—Annual convention of the American Gas Association, in Atlantic City, N. J.

THESE TRAPS

CREATE BUSINESS

FOR PLUMBERS

☆ Because they measure up to the most rigid code requirements, sanitary authorities have placed their stamp of approval on these **American** Anti-Syphon Traps. When subjected to the *severest* tests, **American** Anti-Syphon Traps *stand up*. Mechanically *correct* in every detail, these Traps are also *attractive* in appearance.

☆HOMEOWNERS are now living in an enlightened age and few are willing to sanction the installation of plumbing brass goods of unknown or questionable merit. For nearly a quarter of a century— **American** Brass Goods have demonstrated their superior quality and workmanship in countless installations the country over. **American** Anti-Syphon Traps are no exception. Their unique features of design and construction make them highly preferable to the ordinary anti-syphon trap. To plumbing contractors who recommend them to their customers, **American** Anti-Syphon Traps mean *business*. Go after this business *now*. Order from your jobber.

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ANTI-SYPHON TRAPS

Put Her on guard over your products and your good name...

OLD DUTCH

is made with pure **SEISMOTITE**

REG. U.S. PAT. OFF.

When you've finished installing a new sink, bathtub or wash basin, your job is *done*—but your product's job is just *beginning*. And it is the service and satisfaction rendered by it that sells the value of your services. Don't gamble with your good name! Play safe. Recommend cleaning only with Old Dutch and you *know* that porcelain fixtures will retain their brilliant new luster through many years of use.

There's nothing else like Old Dutch because it is the only cleanser made with pure Seismotite (pronounced Sīs'-mo-tīte)—a scratchless cleaning and polishing material that is scientifically processed and combined with other valuable ingredients. As a result, Old Dutch doesn't scratch . . . polishes as it cleans . . . goes further and costs less to use. And it's so light and flaky that it won't clog drains by settling in the trap.

Old Dutch is the world's largest selling cleanser because it's the world's biggest cleaning value.

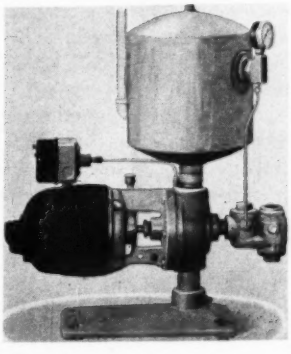
Doesn't Scratch

MAKE THIS TEST. Put a little Old Dutch on a porcelain surface and rub with a coin. You'll neither feel nor hear any harsh grating and no scratches will be made. Then try the same test with ordinary cleanser and notice the difference.

PRODUCTS *for* DEALERS

New Water Supply System

The accompanying illustration shows a water supply system which has just been placed on the market. It is described as being new in design and at the same time an improvement over an older line of equipment. One of the features listed for this equipment is that it has been made so as to be safe for installations where



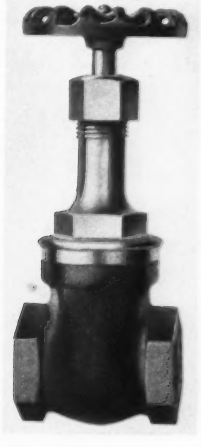
children play. As will be seen from the accompanying illustration, it has been made so as to have no exposed moving parts. Also, it has been made to be compact and to require little space for installation. The unit is self-priming and is described as being capable of lifting water from 28 ft. Other features are that it has been made for quietness, for operation without pounding or hammering, for pumping the air as well as water and for the delivery of an even flow of water. The manufacturer of this equipment is Decatur Pump Company, located at Decatur, Ill.

A Boiler Solder

An announcement of a new boiler solder for steam and hot water heating plants has just been made. This product has been placed on the market for use in servicing leaks. It is described as being made from a base of pure aluminum which melts in hot water but which hardens instantly when cooled at the leak by air. The circulation of the water in the boiler or pipe carries this product to the leak where it functions to build up a metallic repair. This item is described as not being soluble in water. For use in steam boilers, it is inserted near the leak. Then the boiler is fired until about 3 lb. of steam pressure is developed. This pressure is held until the leak is repaired. The repairing of hot water heating boilers is described as being equally simple. The manufacturer points out that for ordinary leaks, one package of this product usually is sufficient. The Dole Valve Company of 1901 Carroll Avenue, Chicago, Illinois, is the manufacturer.

A New Gate Valve

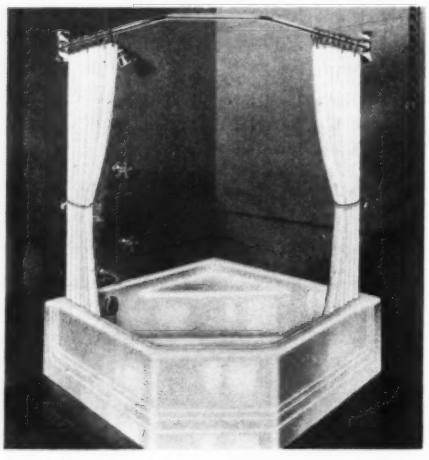
The gate valve shown here just recently has been placed on the market. It is described as having a double faced solid wedge; guides cast in the body; an extra deep stuffing box; lubricated and graphited asbestos packing and interchangeable parts. The wedge is designed with the idea of making it entirely lifted from the flow when opened. The length of the threads on the spindle make it possible for all of the bonnet threads to be in contact with the spindle regardless of the position of the wedge. Jenkins Bros. located at 822 Washington Blvd., Chicago, Illinois, is the manufacturer.



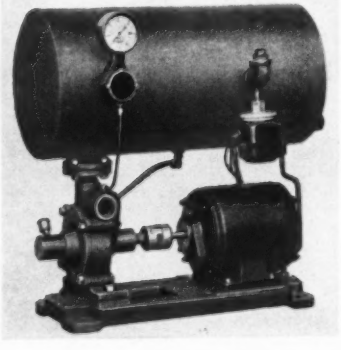
A Square Corner Pattern Bath

The corner pattern bath shown in the accompanying illustration has just recently been placed on the market as an addition to a recently introduced line of square tubs. As will be seen from the illustration, this unit has two integral seats. While this corner tub is available with the same concealed fittings as on the recess tub of the square type, it can be furnished advantageously for remodeling work with a new transfer type shower. In this case, the wall need be routed out only a small amount to take the concealed tempered water supply. This installation can be effected on an out-

side brick wall if necessary. This transfer type shower is so arranged that each and every time the supply valves are opened, the water is directed to the tub supply outlet. No water is delivered through the shower head until the trip lever, at a convenient height, is opened. This feature is designed to eliminate the possi-



bility of receiving a surprise shower and permits the bather to test the water temperature before getting into the shower. This new equipment is described as having an application in owner occupied homes, in houses and apartments where landlords need assistance in renting their property and in hotels where it is desired to make rooms with baths more acceptable. The Standard Sanitary Manufacturing Company, P. O. Box 1226, Pittsburgh, Penn., is the manufacturer.



New Automatic Water System

Here is a new automatic house water supply system which has just been placed on the market. The manufacturer points out that water can be lifted with this unit up to a height of 25 ft. under average conditions and that the system is built for a pressure range of from 20 to 40 lb. per sq. in. Also, that its consumption of power is proportionate to the pressure. The balanced impeller is described as being the only moving part. Spring-loaded, seal-type packing glands rotate with the shaft for the purpose of eliminating wear and attention. The sleeve bearings are described as being extra long and as being made of chrome nickel bronze alloy. Other features listed for this are that it is self priming, fully automatic, vibrationless and silent, light in weight and compact in size. Roots-Connersville Blower Corp. of Connersville, Ind., is the manufacturer.

A New Cabinet Lavatory

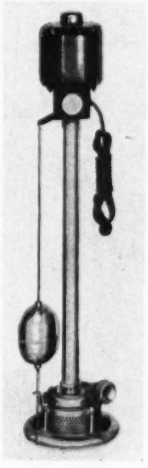
The cabinet lavatory shown in the accompanying illustration has just been announced. A number of features are listed in favor of it. Included among these are what is described as a deep and generous sized basin, a large cabinet space, a handy towel bar alongside, and a raised spout to prevent backsiphonage. Also it is described as having a recessed base to provide adequate foot room. All trimmings are chromium plated. The over-all size of this lavatory is 24 in. by 20 in. The unit is made to overcome the necessity of using space elsewhere for storage of the articles in daily bathroom use. This enameled iron lavatory can be furnished in white or color. Crane Company, 836 S. Michigan Ave., Chicago, Ill., is the manufacturer of this new lavatory and enclosed cabinet combination.

Porcelain Polish in New Container Announced

A new air tight glass jar container for a porcelain polish has just been announced. The polish is in the form of a cream and is for use on enameled surfaces as well as porcelain. It is made so as not to dull or scratch the surface luster on plumbing fixtures. The manufacturer points out that a wide mouth has been made on this glass jar so that the cream can be extracted easily. Also, the screw type cap is designed for easy removal. J. A. Sexauer Mfg. Company located at 2503 Third Avenue, New York, is the manufacturer of this recently marketed product.

An Improved Cellar Drainer

The cellar drainer which is shown in the accompanying illustration has been placed on the market for use in draining seepage water from basements. It is



described as an improvement over an earlier line of equipment. This new line of cellar drainers is made in six sizes to meet the demand for various depth sumps. The pumps are of the centrifugal type with what is described as high efficiency impellers and all bronze construction including the column pipe. Shafts are of stainless steel and are supported at both ends by what are described as extra large bearings. The motor is rated to deliver 1,750 r.p.m. with a switch and thermal overload built into the special motor head. The switch used is of the positive snap-action type with pure silver contact tips designed to promote long life. The thermal overload is included as a protection for the motor against improper voltage and overload. The copper float is made to be detached easily without disturbing the pump. The Deming Company located at Salem, Ohio, is the manufacturer of this improved line.

Electric Drill For Cutting Pipe Holes

The accompanying illustration shows a new 5/8 in. ball bearing electric drill which has recently been placed on the market. This drill is equipped with a specially designed motor which, it is claimed, is unusually powerful for a drill of this size. The motor used is of the Universal type, for operation on A. C. or D. C. 60 cycle or less (all voltages) and the armature is statically and dynamically balanced to eliminate vibration. The drill is housed in a die-cast aluminum alloy body. Smoother operation under heavy service is assured, it is claimed, by the use of ball bearings throughout on the motor spindle and the gears. The motor is cooled by a balanced fan mounted on the armature shaft, with effec-

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KENNEDY valves are generously proportioned, made of carefully selected materials and accurately machined to assure easy installation and easy operation. Be sure to insist upon Kennedy Gate, Globe, Angle or Check Valves and Kennedy Malleable Iron, Cast Iron, or Brass Pipe Fittings. You will find them reasonably priced and thoroughly satisfactory in every respect.

Fig. 57
Iron-Body Gate Valve for moderate pressures

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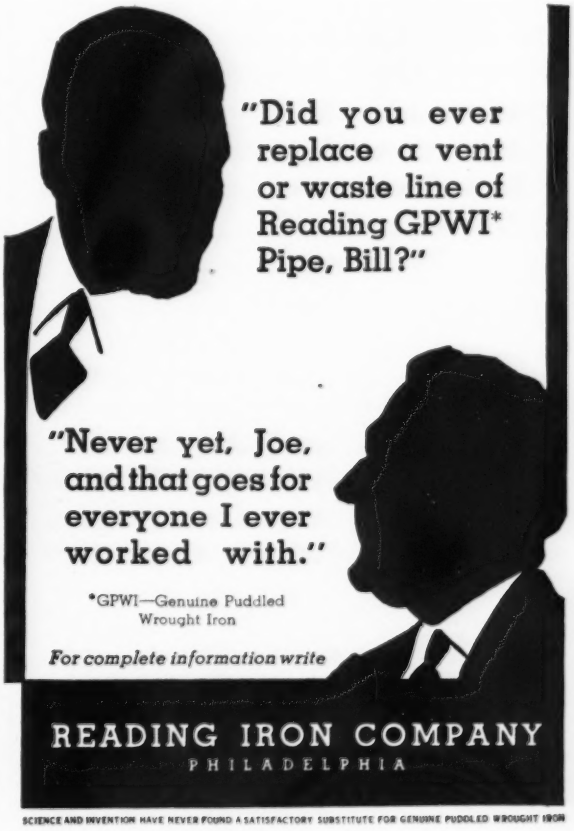
Elmira, N. Y.

Buy Kennedy Products from your Distributor


"Did you ever replace a vent or waste line of Reading GPWI* Pipe, Bill?"
"Never yet, Joe, and that goes for everyone I ever worked with."
*GPWI—Genuine Puddled Wrought Iron
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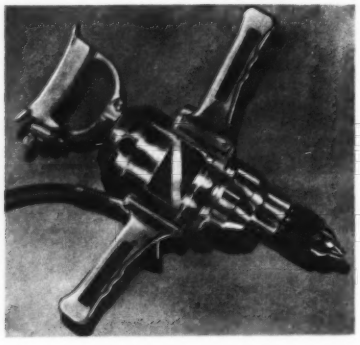
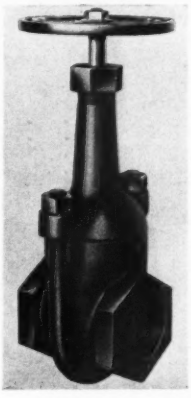
tiveness amplified by a special baffle plate. This large size drill is adapted for use with hole saws, which permits cutting holes up to 4⅛ inches in diameter, thus



permitting the entrance of pipes up to 3½-inch size. The manufacturer of this equipment is Skilsaw, 3310 Elston Avenue, Chicago.

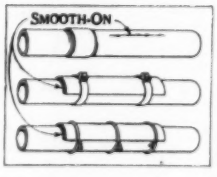
An Improved Clip Gate Valve

A clip type gate valve with several new features has been announced just recently as an addition to an extensive line of valves. This valve has a round bonnet. A full U-bolt is used to hold the bonnet joint tight. The design is made so that when the nuts on these bolts are tightened, pressure is equalized on both sides. Three sets of guides on the body and two solid eye lugs on the bonnet are designed to hold the U-bolt and to eliminate the possibility of slipping. Among the internal features listed for this are the full thickness I-beam cast wedge which is used with the idea of bringing sturdiness to the valve seat and to permit the use of full sized body guides for correct seating. A horseshoe connection is used to assemble the spindle and wedge. The idea of this is to provide relatively great strength and

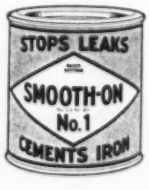


lifting surface. The guide slots in the wedge are machined. These valves are made in all iron and bronze mounted construction. Reading-Pratt & Cady Company, Inc., of Bridgeport, Conn., is the manufacturer.

To make cracked pipes pressure-tight, apply Smooth-On No. 1



SHORT cracks or splits can be sealed by simply scraping out, and pounding in a stiff putty of Smooth-On No. 1 with a hammer. For cracks of greater length and those subject to greater pressure, this repair can be reinforced by plastering more Smooth-On No. 1 outside, covering with a thin metal plate, and binding with split straps or wrapped wire. By means of simple economical variations of these schemes, Smooth-On No. 1 may also be employed to stop leakage quickly and permanently at cracks in any pressure cylinder or shell. The Smooth-On Handbook gives full instructions illustrated by diagrams.



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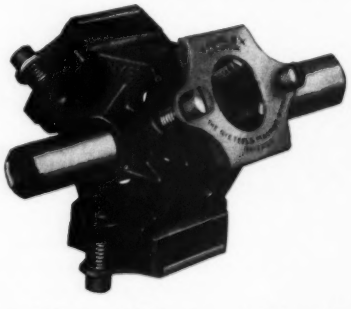
NEW "TRIPLEX" STOCK



THE tool illustrated is presented in response to popular demand for a lightweight combination stock for use with solid dies.

Without sacrificing the durability of the stock, numerous openings have been provided, not only to prevent chip accumulation, but to allow the operator to apply oil freely on the pipe.

Furnished with Nye No. 1 skip-tooth solid dies in two combinations—⅜" to ¾" and ½" to 1".
Net Price complete, each.....$9.00

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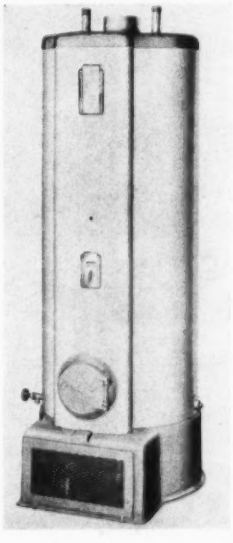
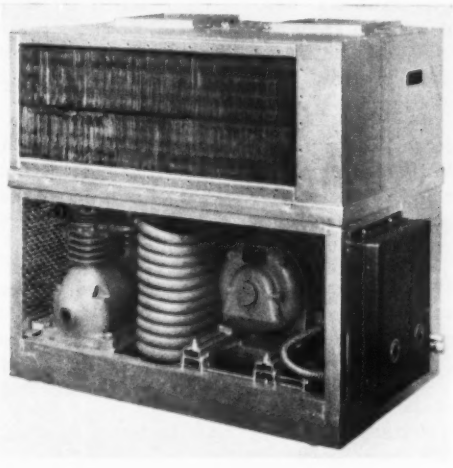
This section gives a report of the latest news of selected automatic heat and air conditioning products. Sales helps such as these work to open up new and increasing markets for Dealers.

New Line of Oil Fired Water Heaters

A new line of oil fired water heaters has just been placed on the market to provide equipment for the production of low cost automatic hot water. The new line includes two models, the first of which is a self-contained water storage tank heater consisting of a fully enclosed oil burner, a 40 gallon storage tank, a casing designed to be heavily insulated, a relief valve and automatic controls. The recovery rate of this model is designed to be 40 gallons per hour heated through a 100 degree rise in temperature. The second model is provided with a copper water coil instead of a tank, and is designed for installations in connection with separate



water storage tanks of any capacity up to 200 gallons. This heater is adapted for installations in apartment houses and commercial and industrial structures, as well as in residences. Multiple installations of this equipment are recommended by the manufacturer where requirements exceed the capacity of a single unit. Both of these models are provided with a rotary type burner which is described as having the same basic design as the burner used in this company's home heating equipment. The burner uses No. 2 oil. It is pointed out that this grade permits connecting the water heater burner to the same oil storage tank which supplies the burner heating the home. The burner ignition is electrical. The flame ring is made of chromium steel and is designed to be quick heating. The motor is rated at 1/200th h.p. Both models are described as being completely equipped with automatic safety and operating controls. The water temperature can be regulated by a finger tip adjustment of the control lever. The finish is in two tones of green lacquer. The Timken Silent Automatic Company, located at 100 Clark Ave., Detroit, Mich., is the manufacturer.



New Air Conditioner Is Announced

Here is a new unit which has just been announced for use in air conditioning in stores, homes, offices, restaurants, barber and beauty shops, funeral homes, theaters and the like. It is described by the manufacturer as an adaptation of the railway type of air conditioning unit. The design has been worked out with the idea of making the unit light, compact, complete and ready to connect the ducts, pipes and wiring. All of the controls are described as being adjusted at the factory. In the installation of this equipment, the following five steps are recommended: First, determine the amount of air to be cooled and circulated; second, select the unit of the proper capacity to circulate and cool that amount of air; third, place the conditioner in position and connect the water and electric lines, fourth, install and connect the standard type inlet and outlet air ducts between the air conditioner and the rooms to be cooled; and fifth, turn the electric switch and place the unit in operation. This unit is manufactured, shipped and installed as one assembly. All parts used in the refrigerating process are already in place and are made to be ready to operate. All of the duct work, wiring and piping in the

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Whiting opened up a *mass* market for stokers—because its domestic models were designed primarily for the home. They are not under-sized commercial models. Operating at a cost that can be even less than that of hand-firing—Whiting has *every* home for a prospect.

This gives Whiting dealers a chance to obtain a volume of sales comparable to those of electrical refrigerators. Automatic Heat is no longer restricted to the homes of the wealthy. The Whiting is well within the means of the average family.

Many leading American distributors and dealers are now selling the Whiting Stoker, and know that the market we predicted for it is a reality. Even last winter sales were running at what had previously been considered good Spring and Summer business.

Wide awake plumbing and heating dealers who have not investigated the market for Whiting—and its profit possibilities—may be very much surprised. The coupon below will bring the facts.

WHITING STOKER

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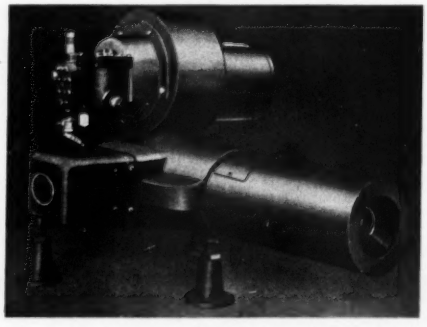
installation are provided and installed by the heating and air conditioning dealer. The announcement of this equipment comes from General Refrigeration Sales Company of Beloit, Wis.

A New Oil Burner Is Announced

The accompanying illustration shows an oil burner which has just been announced. The general specifications include a motor of the split phase type, designed to develop ⅛ h.p. at 1725 r.p.m., 110 volt, 60 cycle, A.C. only. The transformer is rated at 10,000 volts and is described as having the mid-point grounded to eliminate radio interference. It is sealed in pitch and is described as being oil and water proof. The capacities listed for this burner are 1,400 sq. ft. of maximum equivalent direct hot water radiation or 900 sq. ft. of steam radiation (also, maximum e.d.r.). This burner when fitted with a 3.0 gallon nozzle will handle the largest warm air furnace in domestic use, according to the manufacturer.

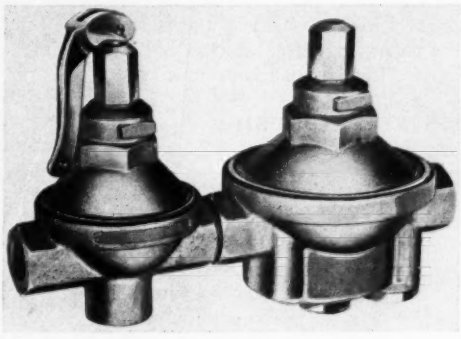


The nozzles are made with a brass body and with a nitraloy steel tip designed to be stainless and non-corrosive. Nozzles are made in a variety of sizes ranging as follows: 1.35, 1.65, 2.00, 2.50 and 3.00 gallons per hour. The fuel recommended for this burner is No. 3 commercial standards designation or better. The ignition is from an electric spark only and a choice of either a continuous or intermittent type is provided. The controls are described as consisting of the approved oil burner items, including a boiler control. The oil pump is of the two-stage type and combines a self-priming fuel pump with a pressure regulating valve and strainer. Bright green with black trimmings is the color combination for this unit. Fluid Heat Division, Anchor Post Fence Company, Eastern Ave. and Kane St., Baltimore, Maryland, is the manufacturer of this burner.

A New Pressure and Relief Control

The combination pressure and relief control which is shown in the accompanying illustration has been designed for the purpose of keeping, automatically, a hot water heating system filled with water and for relieving automatically any excess pressure that may occur in that

system. It has been made to have an extra large capacity and is recommended for use, by the manufacturer, when quick filling of the system is desirable. Also, it is made to comply with the A. S. M. E. code. The control consists of a relief valve in combination with a reducing valve. Both of these valves are designed to have what is described as large, laminated, phosphorus bronze



diaphragms which are sensitive and positive in action, resistant to heat and corrosion and capable of retaining their original flexibility without becoming brittle. Gaskets above and below the diaphragms and relieved casting corners are provided to prevent binding and to insure maximum diaphragm efficiency. Special composition disks are made to be sufficiently hard so as not to interfere with the valve flow, yet soft enough to prevent cracking and to provide perfect seating. They are supported in disk holders by large-head screws for the purpose of assuring long life. The manufacturer points out that springs are calibrated carefully and have been made with especially high fatigue resistance. The only spring exposed to water is the one below the seat in the reducing valve. This spring is of phosphorus bronze and is designed to make the valve sensitive at lower pressure differentials. Large brass strainers are included to protect the seats of both the relief and reducing valves against injury from scale or other foreign matter. The strainer in the reducing valve is made easily removable for cleaning without disturbing the other parts. The relief valve has a lever for testing the valve in service, without building up a pressure in excess of the valve's setting. Penberthy Injector Company, located at Detroit, Mich., is the manufacturer.

Coal Burner Placed on Market

The accompanying illustration shows a coal burner which just recently has been placed on the market. It is described as having new features as well as improvements over an earlier line of equipment. This burner is made in sizes described as being suitable for the smallest home to small apartments and buildings. It is designed to burn automatically any size of domestic coke, including breeze or low volatile coal in the smaller sizes. This burner is made to be controlled by a thermo-

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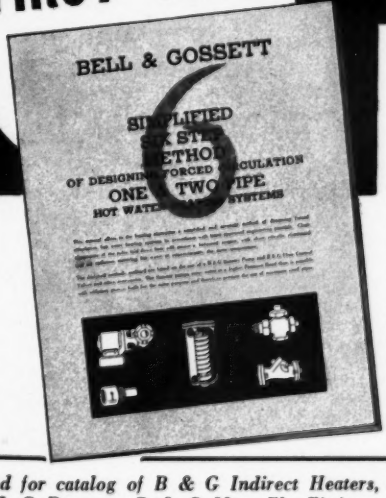

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Nothing like it ever published! Bell and Gossett leads the way again with *the first authoritative instruction book on designing and pipe-sizing forced circulation Hot Water Heating Systems.* The latest approved engineering practice reduced to six simple steps—written so anybody can understand and use it. 20 pages of sketches, handy tables, and other data exceedingly valuable to the heating contractor.

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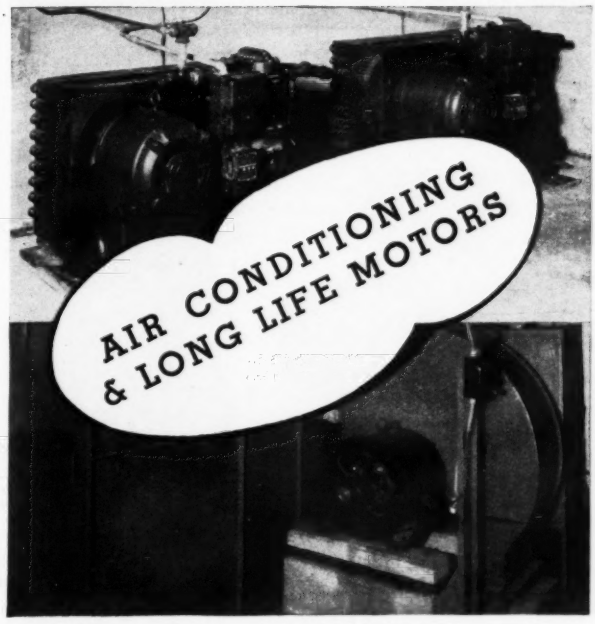

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High starting torque — low starting current — dependable — efficient! Look for these features in motors for your Air Conditioning Equipment — you'll find them all in Century Single Phase Brush Lifting Type Motors, proved by more than 31 years' successful service in automatic and remote control installation under all kinds of surrounding climates and severe operating conditions...Sizes 1/8 to 40 Horse Power.

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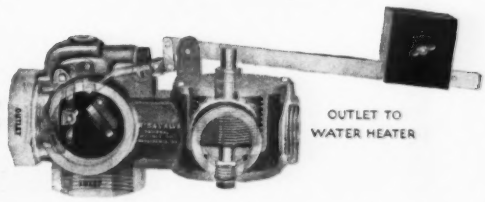

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The application of this motorless, automatic control makes the hot water heating boiler a dependable, economical source of year around domestic hot water. Risavalve has also proved by test that it peps up sluggish hot water heating systems, greatly improving their efficiency for house heating.

Write now for our *new* circular describing this money-saving, profit-making control system. You will want to be in a position to offer your customers low cost, trouble free hot water control. Cash in on the spring business.

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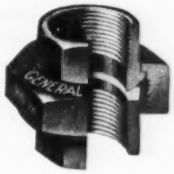
Greater heating capacity. Easier to install. An outstanding value.



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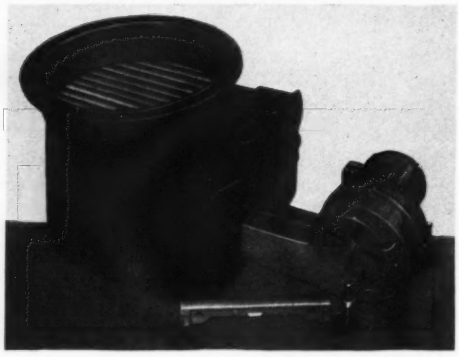
NEW YORK PHILADELPHIA

stat located in the upstairs portion of the home in which it is installed. A high limit control is supplied for steam, hot water or warm air to eliminate any possibility of over-heating. As the thermostat calls for heat, the burner begins to operate. Should the thermostat setting be changed suddenly to a higher degree, the



high limit control will permit the heating plant to reach only a predetermined temperature. At that time, this control will shut off the burner automatically, to permit the heat generated to be distributed to the living quarters. Allowing for time for the limit control to cool, if the thermostat setting still is not satisfied, the burner again will operate and continue over this cycle until the desired temperature is reached. After the temperature at which the thermostat is set has been reached, the burner ceases to operate. This temperature then is maintained by an electric clock that operates the burner at semi-hourly intervals for a predetermined length of time. The burner has only one moving part which is a fractional horsepower motor, designed so as not to have radio interference. It is made for use with either A.C. or D.C. current. The burner is mounted on rubber for the purpose of eliminating all noise and vibration. It is designed for compactness and is furnished in colors. Sto-Coke Incorporated, located at 1513 E. Michigan St., Indianapolis, Ind., is the manufacturer.

Water Circulators and Flow Valves

A new line of water circulators and flow valves have been developed for use in improving systems where, for instance, gravity flow leaves certain radiators cold, where radiators on the ends of mains fail to heat equally with those nearer the boiler or where installations have been made with pipe sizes too small for good gravity circulation. The accompanying illustrations show both the circulator and the flow valve. The installation of a hot water system in a new building, it is pointed out, can often use a circulator advantageously because of the saving due to the use of smaller pipe. These water circulators are made for 1½, 2 and 3-inch pipe sizes, and the motors used in their construction are of the brushless type. The motors are spring mounted and the shafts are oil sealed.

JONES' ESTIMATING TABLES

A new book containing information you should know about air requirements and duct sizes for heating and air conditioning

NOW you don't have to waste your valuable time trying to estimate heating and air conditioning requirements. Here's a new book that does this kind of work for you.

Estimating duct sizes . . . areas of registers . . . dimensions of risers and ducts . . . heat losses in Btu . . . air requirements at various velocities . . . all of these are enough to give the average heating man a nightmare. Yet with the advance of air conditioning, and the boom of modernizing and remodeling brought on by the Federal Housing Act, heating men can no longer dodge the issue.

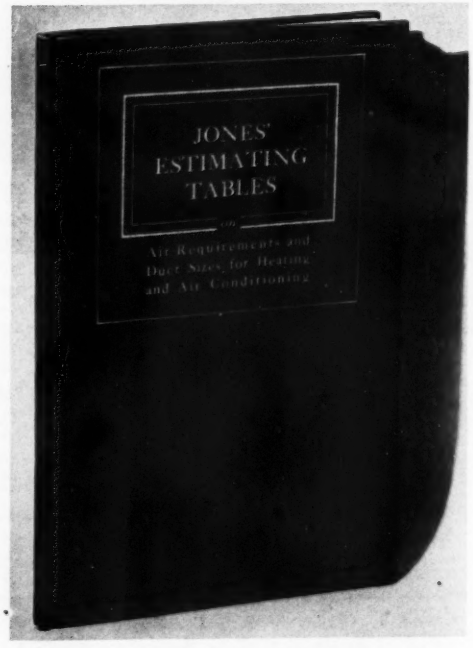
This book makes the work of figuring heating and air conditioning requirements, clear, easy and absolutely certain. It positively eliminates the chance for error or omission. It not only saves you time in estimating but it will eliminate many costly call-backs after installation.

In the book are four sets of tables for 60, 70, 80 and 90 degree temperature difference. You use the table which meets the climate condition in your locality. The tables cover every possible condition including the various types of construction, roofs, floors, ceilings, insulation, single and double glass, windows, everything that will have an effect on heating and air conditioning. And the tables can be put to use on any systems using ducts regardless of whether a boiler or furnace is used for heating. In the book is an easily understood explanation of the tables, together with a practical illustration of how they should be used. It makes the job of estimating air requirements and duct sizes, so simple that you just can't go wrong.

The author, a well known heating engineer, has been figuring this type of work for the past twenty years, and since the compilation of these tables, has yet to get a job upon which the tables will not work to perfection.

The book is reasonably priced at $2.00, considering the fact that twenty years of experience are back of the tables in the book.

Send in your order today. If the book is not all we claim, if it will not make easy the kind of work that many heating contractors would like to sidestep, then we will gladly refund your money. Fill in the coupon, pin your check to it and mail it today.



DOMESTIC ENGINEERING, 1900 Prairie Avenue, Chicago, Illinois.

Please send me one copy of JONES' ESTIMATING TABLES for which I enclose $2.00. I am to have the privilege of returning this book if it is not what it is claimed to be.

Name .....

Address .....

City and State..... DE-4

Sales Helps Offer Aid to Dealers—

How to Reduce Cost of Steam Generation

The Brown Instrument Company of Philadelphia has issued a well-illustrated folder describing and illustrating its instruments which have been designed to reduce the cost of steam generation and distribution. Among the instruments featured are: Flow meters, CO_2 meters and draft gauges, pressure gauges, and thermometers and pyrometers. These indicating and recording instruments can be mounted on individual panels or grouped on a central control board. The folder stresses the point, that whether oil, gas or coal is burned, the starting point toward controlling steam costs is the accurate measurement of flows, temperatures, % CO_2 pressures, drafts and liquid levels.

"Six Ways to Figure Radiation" A New Hand Book

Domestic Engineering Company, 1900 Prairie Ave., Chicago, has just published a new book which is now ready for distribution. It is entitled, "Six Ways to Figure Radiation," and is written for those confronted with everyday problems in estimating radiation requirements for house heating.

This new book contains 64 pages and five illustrations. There are 15 complete tables, also several practical examples which have been worked out to show application of the methods described.

After a very instructive foreword, the following methods of figuring radiation are explained in complete detail; How to Figure Radiation Without Tables; The Cubic Divisor Method of Calculating Radiation; Calculating Radiation by the 2-20-200 Rule; Estimating Radiation by the Use of Tables; Figuring Radiation by the Btu. Method; and, Calculating Radiation by the Decimal Factor Method.

The methods selected in this book range from those that require the simplest operations on the part of the estimator, to those that are based on the most accurate and technical data.

The entire contents are written in understandable language. The book is a handy pocket size, 3¾ in. by 6½ in., bound in red imitation leather. Price postpaid $2.00.

New Reference Manual of A. C. Registers and Grilles

Hart & Cooley Manufacturing Company of 61 West Kinzie Street, Chicago, has issued a "Reference Manual of Registers and Grilles for Air Conditioning and Ventilating Installations" for the convenience of engineers and architects. This book consists of 16 pages, 8½x11 in., and contains complete details and engineering data of this company's line of registers and grilles for air conditioning, ventilating and forced air systems. The manual stresses the point that this line has been designed to meet all essential requirements of appearance, performance, construction, and installation. Numerous

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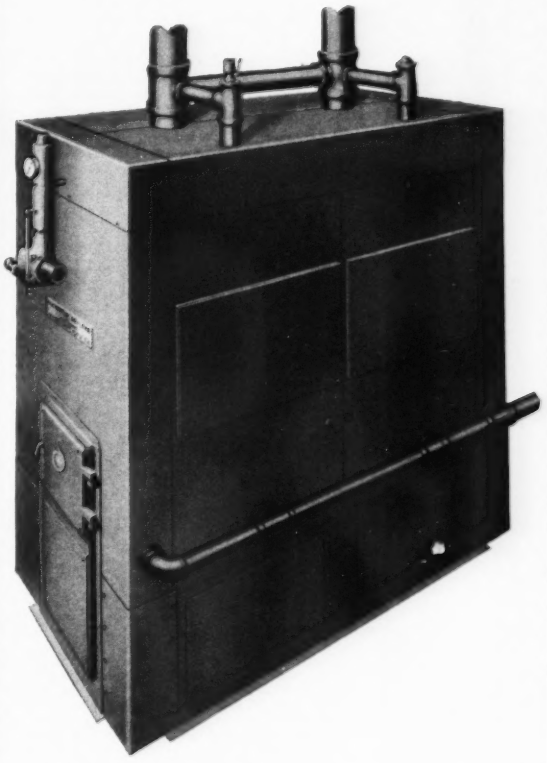

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Can be put into basement through a 2 ft. door.

Steaming Boilers—(40 sizes) 1250 ft. to 20,000 ft.

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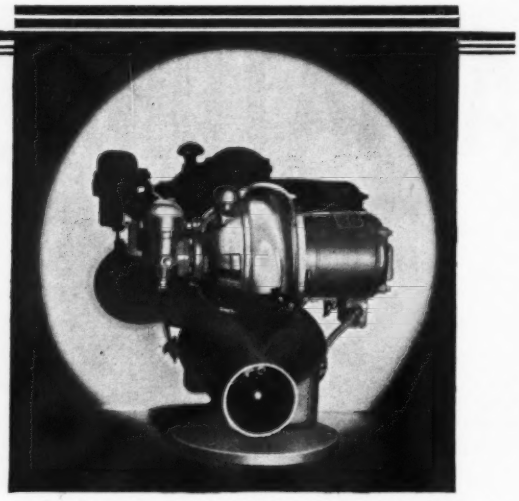

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YOU can do a larger business with less investment and make more profit selling Wayne "Mistoil" Burners. One universal size Model "K" is capable of heating from eight to thirty-six rooms with equal efficiency. Therefore you have only one size burner to stock.

Wayne dealers are supported by national advertising and localized direct mail campaigns which produce prospects continuously. Write us today!

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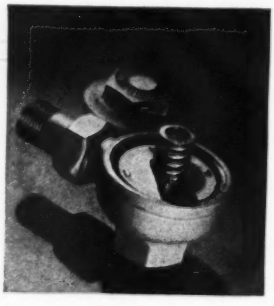
602 Glasgow Avenue, Fort Wayne, Ind.

fixes traps quick



When a trap gets cranky, unscrew the cover, lift out the old element, insert a new Barnes & Jones cage unit. The trap is at once returned to new-trap performance. Each unit is complete in itself, with its own thermostatic element, plug and seat. No adjustments. No skill, special tools, trouble or delay. And the cost is usually less than half the cost of ordinary repairs. Write today, giving size, make, and manufacturer's number of your present traps and we'll send you prices on cage units complete with new trap covers — and a sample unit for you to try out. No charge or obligation.

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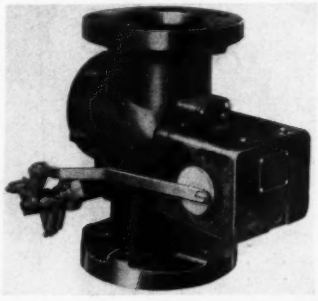
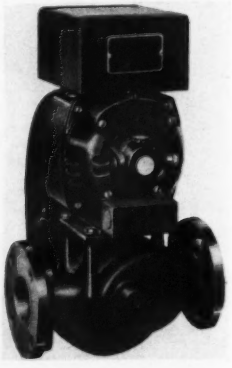
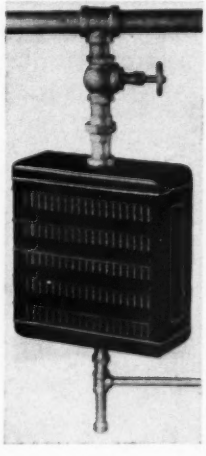
Flow valves for use with circulators or in summer-winter hot water supply systems are especially designed for this service and the valves are of the 45 deg. swinging disc type, permitting installation in either horizontal or vertical position. To avoid water leaks and minimum attention the packing glands are of spring compression type. The valves are constructed with a manual operation feature but they may be equipped with motor power units if desired. Minneapolis - Honeywell Regulator Co., Minneapolis, Minn., is the manufacturer.





Recently Announced Unit Heater

The accompanying illustration represents a line of unit heaters which is made in sixteen steam and fourteen hot water sizes. It is of the suspended propeller fan type. In other words, it is made so that the supply connection to the unit is the only support required. Another feature of this equipment is that on all except two models, which are the twin unit models, provisions are made so that the units can be rotated 360 degrees with the idea of making it easy to change the direction of the air stream at any time. Modine Manufacturing Co., of Racine, Wisc., is the manufacturer.



for your trade library

☆

AIR CONDITIONING SIMPLIFIED

A new book which gives a step by step story of air conditioning, what it is, how it works, what it does, how to install it, how it is sold. The book is written in three complete parts from the pens of the leading authorities in the industry and edited by Harold L. Alt, heating engineer. The first part is on theory, the second part on the application of the theory and the third part on getting air conditioning business. 216 pages, 5½x8¼, bound in cloth—price postpaid $1.00.

☆

ALT'S HOUSE HEATING PLANS

By Harold L. Alt. Will give the heating contractor the very latest information for use in designing and installing heating systems for bungalows, residences, garages and combination store and apartment buildings. All of the smaller type of structures. It includes design for all of the various boiler and radiator systems, data on accessories and gives full and complete layouts. Progress within recent years in the design and manufacture of heating equipment has been so great that small structural heating system installations present entirely new and different problems. These are solved in this book. 208 pages, 5½x8¼, bound in cloth, price postpaid $1.00.

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OIL BURNER HEATING

discusses oil burner heating problems from the sale of the job to the operating installation. Every chapter in the book is built upon direct questions asked by heating men. Testing problems worked out show what should be done to test efficiency of installation, how to compare cost of oil or gas heating, how to find heat losses, how combustion chambers are built, what to do when changing from gas installation to oil burner, how to figure oil consumption for year, etc. Can be used on practically any oil burner installation, and much of the information it contains applies also to gas burning boilers and to stokers. 184 pages, 5½x8¼, bound in cloth, price postpaid $1.00.

☆

500 PLAIN ANSWERS TO DIRECT QUESTIONS

On Steam, Hot Water, Vapor and Vacuum Heating

By Alfred G. King. Covers the science and general practice of heating including modern systems of modified heating explained in a series of plain questions and answers with tables, rules and general information. It makes a splendid text-book for the apprentice and an ideal reference book for master fitters. Has 253 pages, 6x9, bound in cloth. Price, postpaid $3.50.

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tables of sizes and capacities are given as well as many designs and sketches. Special attention is also given to the company's damper regulator sets for controlling dampers in ventilating and forced air systems.

Circular Tells How to Save Stack-Heat

Stack-Heat Converter Corporation of Hardt Building, Philadelphia, has issued a 4-page circular, 8½x11 in., illustrating and describing its stack-heat converters, which are designed to save fuel and bring heating systems up to a higher degree of efficiency. The circular also shows some of the apartment houses, municipal buildings, churches and private residences, in which these devices have been installed.

Burnham Boiler Corp. Issues Book of Boiler Ratings

Burnham Boiler Corporation of Irvington, N. Y., has issued a book of Boiler Ratings, giving capacities of all the boilers which this concern has made during the last fifty years. Although this company has been making boilers for almost three-quarters of a century, it is not thought likely that any one will need information on boilers of earlier date than those shown. The book consists of 54 pages, 8½x11 in., and it contains 53 tables of ratings and capacities.

"Air Conditioning and Engineering" a New Reference Book

"Air Conditioning and Engineering," is the title of a 704-page technical book, complete with charts, photographs, drawings and tables, which has just been published by the American Blower Corporation of Detroit, Mich., for the use of its organization and for reference purposes generally.

This book goes into the various phases of air engineering and air conditioning thoroughly. Experience of the company's own engineers and data gathered from other reliable sources have been included, to bring about an authentic library on the subject in one volume eliminating the necessity for numerous reference books, tables and data sheets.

Subjects covered include air, heat, steam, air flow, sound, heating, ventilating, humidifying, dehumidifying, cooling, control, vapor absorption, drying, etc. All subjects are indexed, charted, illustrated and cross indexed, to permit easy research reference.

The book is divided into two sections, a technical section and an apparatus and equipment section. The former section consists of 370 pages, and the latter of 332 pages, 8½x11 in. in size.

More than four and a half years were required to write and compile this volume. One hundred copies were run off six months ago and placed in the hands of the authors and field executives to check every detail for accuracy before the main press run. What, in reality, amounts to the second and corrected printing of this book, is now ready to be distributed to interested architects, engineers, salesmen and manufacturers at $5.00 per copy.

New Booklet on "Comfortable Heat Automatically Maintained"

Cleveland Steel Products Corporation of 7306 Madison Avenue, Cleveland, Ohio, has issued a booklet, "Comfortable Warmth Automatically Maintained," which stresses the convenience of heating homes with oil. The booklet consists of 20 pages, 6x9 in., and is copiously illustrated with high grade halftone engravings.

Ilg Electric Ventilating Co. Issues Condensed Catalog

Ilg Electric Ventilating Company of Chicago has issued a condensed catalog of its ventilating, heating, cooling and air conditioning equipment, including self-cooled motor propeller fans, speed controllers, automatic shutters, power roof ventilators, kitchen ventilators, dark room ventilators, floor fans, blowers, unit heaters, etc. The booklet consists of 32 pages, 3¼x5¾ in., and it emphasizes the point that "the air you breathe should be as pure as the water you drink."

New Folder on Gas Air Conditioner

The Henry Furnace and Foundry Company of Cleveland, Ohio, has issued an attractive folder, 25x11 in. in size, illustrating and describing in detail its gas air conditioners, gas burners and heating sections, blowers and filter units, and its automatic humidifiers. The company's air conditioning system of temperature controls is also described and consists of the following devices: Thermostat, electric gas valve; combination control, consisting of blower switch and high limit control under one cover, and automatic electric safety pilot. These devices are correlated and operate together.

Fedders Mfg. Co. Issues New Air Conditioning Catalog

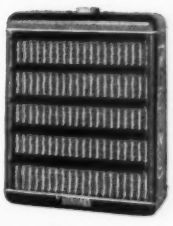
Fedders Manufacturing Company of 57 Tonawanda Street, Buffalo, N. Y., has just published bulletin 91 under the title of "Air Conditioning—Cooling and Dehumidifying Coils," 28 pages, 8½x11 in. in size. A large variety of the company's new line of cooling and dehumidifying coils in various sizes and capacities is shown in this catalog for the purpose of simplifying the selection and installation under practically all conditions. Many tables and four charts are included in the catalog, making it a valuable book of reference for air conditioning engineers and contractors. Among the charts is a psychrometric chart in the form of a triangle, 11x11x16 inches.

"The Trend in Summer Air Conditioning"

The Bryant Heater Company of Cleveland, Ohio, has issued a well-illustrated booklet of 16 pages, 8½x11 in., under the title of "The Trend in Summer Air Conditioning." This booklet tells the story of air conditioning by way of this concern's silica gel method, and contains illustrations of many of the buildings in which this method of air conditioning is used, such as the Baltimore Library, the Dallas Gas Company Building, the Baltimore Hospital, Ye Olde Harmony Tavern on

HUNDREDS OF DISSATISFIED HEATING PLANT OWNERS OFFER YOU A BIG MARKET FOR MODINES

By replacing obsolete, inefficient, wasteful heating plants with MODINE Unit Heaters, you will give your customers real *heating satisfaction* at LOW cost. Hundreds in your locality, no longer satisfied with out of date, inadequate heating facilities, constitute a big market for MODINES. Sell them on Modernizing with MODINES. MODINE superiorities makes them *want* to buy and the Better Housing Program makes it *easy* to buy.



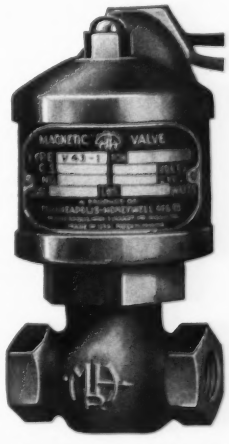
The Gotham Hosiery Company, Dover, N. J., is one of hundreds who have replaced old heating plants with MODINES.

MODINE MANUFACTURING COMPANY
DEPT. 10 RACINE, WISCONSIN

The New MODINE *unit heater*

AIR CONDITIONING CONTROLS

for Domestic or Commercial Installations



Magnetic Shutoff Valve. Silent Solenoid valve with replacement seat and plunger. Especially designed for domestic air washers.

MINNEAPOLIS-HONEYWELL Air Conditioning Controls govern all phases of this work, including heating, cooling, ventilating, humidifying or dehumidifying. There are controls for every application, each designed to accomplish its particular function with characteristic Minneapolis-Honeywell accuracy and efficiency. Minneapolis-Honeywell Regulator Company, 2801 Fourth Avenue South, Minneapolis, Minn. Branch and distributing offices in all principal cities.

MINNEAPOLIS-HONEYWELL
Control Systems

Long Island, the Plaza Hotel at Buenos Aires, the Telephone Exchange at Ipanema, Brazil; the Cacao Institute in Bahia, Brazil; Baltimore National Bank, and other buildings.

Part Five of A. C. Lessons Is Available

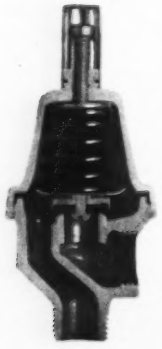
Part Five containing three lessons completing the series of eighteen prepared and published by the Heating, Piping and Air Conditioning Contractors National Association, 1250 Sixth Avenue, New York City, was recently published. These lessons contain information and data on the theory of and equipment for steam jet refrigeration, the selection and design of steam jet refrigeration equipment, and the application of and equipment for ice cooling.

The material was prepared especially for the membership of the National Association, but copies are available to nonmembers at $0.50 per copy. The supply of Parts One, Two and Three is completely exhausted, it is stated. A limited supply of Part Four on Mechanical Refrigeration is still available.

New Oil Burning Reference Book Just Issued

Automatic Burner Corporation, 1823 Carroll Avenue, Chicago, Ill., has just issued its "A B C Reference Book of Oil Burning for Salesmen," a pocket size, leather bound volume of 160 pages, containing information that would otherwise have to be secured from many sources. The book was compiled by Joseph Hirsch and Stanley Perry, and it is founded on the experience of thousands of installations throughout the United States. Among the accessories listed in the book are products of the following manufacturers: Bell & Gossett Co., Chicago; Chase Brass & Copper Co., Waterbury, Conn.; Cook Electric Co., Chicago; Detroit Lubricator Company, Detroit; Excelso Products Corp., Buffalo; Fyr Fyter Co., Dayton, Ohio; Hotstream Heater Co., Cleveland, Ohio; Jefferson Electric Company, Bellwood, Ill.; Laclede-Christy Clay Products Co., St. Louis, Mo.; McDonnell & Miller, Chicago; Minneapolis-Honeywell Regulator Co., Minneapolis; Penn Electric Switch Co., Detroit; Plibrico Jointless Firebrick Co., Chicago; Rochester Mfg. Co., Rochester, N. Y.; Somerville Iron Works, Somerville, N. J.; Taco Heaters, Inc., New York City; Teesdale Mfg. Co., Grand Rapids, Mich.; H. A. Thrush & Co., Peru, Ind.; John Wood Mfg. Co., Conshohocken, Pa., and O. Zernickow Co., New York City. The last section of the book contains a large amount of information on the following subjects: Heating calculations, heat losses from buildings, various heating systems, burner and boiler ratings, relation between "total load" and "net standing radiation," maximum gallons of hot water per 24 hours for private houses and apartments, estimating heating loads, radiation tables, Btu. method of calculating heat losses and heating loads, the degree day system, fuel oil, test equipment, air conditioning, comparative cost of fuels, and a glossary of heating terms. This reference book can be obtained from the publisher at $2.50 a copy.

CASH-ACME
AUTOMATIC
RELIEF VALVES
GIVE A PLUS VALUE!



TYPE FH
An unretouched photograph of a stock valve, cut away to show actual construction.
Note: Accurate centering—large open ports—sturdy construction and uniformity thruout.

They are dependable, they combine proper design and carefully selected high grade materials with honest thorough workmanship. Their rigid inspection through each operation assures uniformity and safeguards user satisfaction.

The FH series bear National Board approval, and meet ASME standards fully. These valves have cast Bronze body . . . forged Bronze spring chamber . . . corrosion resistant Bronze-Nickel-Chrome inserted seats . . . non sticking renewable seat disk . . . and tamper proof sealed cap, protecting accurate factory setting. When you sell Cash-Acme valves you keep your selling profit, no expensive service calls to make . . . then too you pave the way for repeat business. See your jobber for full details, but if he cannot supply you write us direct.

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600 NORTH WATER STREET, DECATUR, ILLINOIS

A.C.E.
AIR CONDITIONING ENGINEERS

Stimulate Your Sales
BY EXHIBITING AT
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MERCHANDISE MART, CHICAGO
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Held concurrently with their Annual Convention
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Chicago Master Steam Fitters Association
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Strictly a Business Activity to Stimulate Air Conditioning Sales

Write
A. B. COFFMAN, *Show Manager*
MERCHANDISE MART - CHICAGO
for Complete Details

Heating and Air Conditioning Manual

L. A. Harding, B. S., M. E., Prudential Building, Buffalo, N. Y., past president of the American Society of Heating and Ventilating Engineers, has just issued Heating and Air Conditioning Manual, consisting of 287 pages, 2¾x5½ in., of formulas, tables, diagrams and charts with examples and line drawing illustrations. This manual was prepared for the use of those engaged in the heating and air conditioning industry, such as sales engineers, students, contractors and designers. The data presented have been extracted to a large degree from "Heating, Ventilating and Air Conditioning," by L. A. Harding and A. C. Willard; "Steam Power Plant Engineering," by L. A. Harding, and the A. S. H. V. E. Guide. Durably bound in imitation leather, it is obtainable from the author, at $1.50 a copy.

Replacements—

(Continued from Page 56)

be quickly bored and anxious to close the conversation. The O'Brien men seek to lead, rather than dominate, the solicitation as the shortest route to new orders. Talkative users met in daily sales calls, if allowed to expand, usually give information that leads to orders for replacement business. So favorably known is this dealer that few if any close the door before hearing the purpose of the O'Brien salesmen's visits. The data obtained are kept in a huge file that contains detailed information of the heating equipment of nearly every building in the territory served by this dealer.

Recirculation—

(Continued from Page 66)

will be apparent not only what temperature is the proper one for the conditions assumed but also what percentage of the air must be by-passed.

If it is assumed that the total air is represented by 100 per cent and that the amount passing through the washer is X per cent, then the amount of air by-passing the washer must be 100 per cent minus X per cent. Now the air passing through the washer plus the air by-passing the washer equals the total air, or 100 per cent, and

X per cent plus (100 minus X per cent) equals 100 per cent.

Knowing that the supply air to the room is at 65 deg. Fahr. and that the washer air is, say, 50 deg. Fahr., the equation for the temperature of air mixtures may be written

50 × X per cent plus 80 × (100 per cent minus X per cent) equals 100 per cent x 65

or

50X per cent plus 8000 per cent minus 80X per cent equals 6500 per cent

or

Minus 30X per cent equals minus 1500 per cent

or

X per cent equals 50 per cent

Over A MILLION
EXCELSO
QUALITY WATER HEATERS
HAVE BEEN SOLD
Ample Proof of Quality and Service
EXCELSO PRODUCTS CORP.
57 Clyde Avenue Buffalo, N. Y.
or
Ask Your Jobber

AUTOMATIC HEAT—
Not In The Cards
Without An
Automatic Water Feeder
THE IMPROVED WATER-BOY
Will automatically take care of the water line during Winter firing or Summer domestic water heating. It is so inexpensive and easy to install, that no one can afford to be without it.
No. 85 S-T
WATER-BOY
Dual Safety Feeder
Complete with tubing and fittings to connect to heating boiler.
THE 85 S-T
IS DUAL
PROTECTION
LIST PRICES
Effective April 1st, 1935
No. 85 Water-Boy only $6.50
No. 85-F with fittings 7.25
No. 85-S-T with fittings 12.50
No. 53 Water-Feeder for Hot Water Radiator pans 4.00
No. 200 Auto-Vent for Hot Water Radiators 2.75
Removable Screen
Self Closing Valve
Union
Compound lever
Copper Float
Size 2¼x6½
Sectional View
No. 85 WATER-BOY
● ASK YOUR JOBBER ●
MAID-O'-MIST, Inc.
Wm. J. Woolley, Pres. 43 E. OHIO ST. CHICAGO, ILL.

Sectional View
Actual Size

MERCOID DA-31
NEW TYPE PRESSURE CONTROL

Wide range and close differentials can be obtained. Easy to adjust from the outside for both cut-in and cut-out pressures. Not necessary to make any calculations to determine the operating points—the indicators plainly show on the dial, the pressures at which the instrument is set to operate. This instrument has no equal.

Write for Bulletin A-65

THE MERCOID CORPORATION
4221 BELMONT AVENUE CHICAGO, ILLINOIS

SpeedWay Electric **HAMMERS**

Saves More Than Any Other Tool
GUARANTEES Your Profit

Through stone, concrete, plaster, brick—nothing stands in the way of a SpeedWay Electric Hammer. 1,800 powerful blows per minute. Takes drills to 1¼" diameter. Handy—weight 26 lb. Built for 20-year service. It's a money-maker—makes 1 man equal to 10. Always the standard—there are more SpeedWays in use than any others.

No. 6 Electric Hammer

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SpeedWay Manufacturing Co.
1627 So. 52nd Ave., Cicero, Ill.

More Tool for the Money

Relief Valve No. 30

WATTS
Plumbing and Heating Specialties
Backed by over 61 years experience

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Water Pressure Regulator and Strainer Type 23-S

JOHN G. KELLY, Inc.
Distributors
210 East 45th St., New York, N. Y.

WATTS REGULATOR COMPANY
Lawrence, Mass.

Now, if X per cent (or the quantity passing through the washer) is 50 per cent then the quantity by-passing the washer will be 100 per cent minus X per cent or 100 per cent minus 50 per cent or 50 per cent by-passing. In proof of this the percentages may be substituted and the temperature of the mixture may be calculated thus:

50 per cent × 50 deg. Fahr. equals 25 deg. Fahr.
50 per cent × 80 deg. Fahr. equals 40 deg. Fahr.
Temp. of Mixture.....65 deg. Fahr.

Similar calculations can be made for any temperature in the washer assumed and the percentages of air by-passed ascertained as long as the desired temperature of the mixture (or the supply air) is known.

TABLE ONE
Properties of Air

Temp. Deg. F.	Cu. Ft. per lb.	Weight per Cu. Ft.	Grains Saturated Per lb.	Grains Saturated per Cu. Ft.	Cubic Feet Raised 1 deg. F. by 1 Btu.
—20		0.090		0.219	45.96
—10		0.088		0.356	47.00
— 5		0.087		0.450	47.52
Zero	11.58	0.086	5.47	0.564	48.77
5		0.085	7.10	0.705	
10		0.084	9.16	0.873	49.90
15		0.083	11.77	1.075	
20		0.082	15.01	1.321	50.83
25		0.081	19.10		
30		0.081	24.11	1.96	52.00
32	12.38	0.080		2.11	
35		0.079	29.90	2.37	
40	12.58	0.079	36.40	2.85	52.92
45		0.078	44.20	3.41	
50	12.84	0.077	53.50	4.08	53.94
55		0.077	64.40	4.85	
60		0.076	77.30	5.74	55.02
65		0.076	92.60	6.78	
70	13.34	0.075	110.5	7.98	56.30
75		0.074	131.4	9.36	
80	13.59	0.073	155.8	10.93	57.22
85		0.073	184.4	12.73	
90	13.84	0.072	217.6	14.79	58.40
95		0.072	256.3	17.12	
100	14.09	0.071	301.3	19.77	59.10
105		0.070	354.0	22.75	

The absolute humidity when by-passing air will be dependent on the absolute humidity of the recirculated air and the absolute humidity of the air delivered by the washer. For instance, in the foregoing with 50 deg. Fahr. air from the washer and 50 per cent by-passing, the absolute humidity of the washer air will be the number of grains for saturated air at 50 deg. Fahr. or 53.5 (see Table 1) while the absolute humidity of the recirculated air (assuming 80 deg. Fahr. in the room with 50 per cent relative humidity) will be 155.8 grs. saturated × 50 per cent or 77.9 grains. The grains in the resultant mixture will be as previously determined,

53.5 grs. × 50 per cent or 26.7
77.9 grs. × 50 per cent or 38.9
Grs. in Mixture.....65.6

Similar calculations may be made for other assumed temperatures and the approximate washer temperatures determined within very close limits; for instance, in a theater where about 14 grains per pound is added to the air gives the following tabulation showing that the approximate washer delivery temperature lies between 46 and 47 deg. Fahr. for the conditions assumed. By plot-

ting these results on a curve as shown in Fig. 1, the temperature may be read very accurately.

TABLE TWO
SCHEDULE OF BY-PASS PERFORMANCE AND RESULTANT HUMIDITY

Temperature maintained in room.....80 deg.Fahr.
Relative humidity in room.....50 per cent
Absolute humidity in room.....77.9 grs. per lb.
Temperature of supply air to room.....65 deg. Fahr.
Grains per lb., added in room.....14 grs.
Absolute humidity of supply air to room.....63.9 grs.
Percentage of recirculation.....75 per cent
Percentage of outside air.....25 per cent
Total air supplied to room.....100 per cent

Temp. of Air Leaving Air Washer Deg. Fahr.	Per Cent of Air Through Washer	Per Cent of Air By-passing Washer	Temp. of Mixture Deg. Fahr.	Abs. Humidity of Mixture Grs.
45	43	57	65	63.40
50	50	50	65	65.70
55	60	40	65	69.80
60	75	25	65	77.45
65	100	0	65	92.60

while with air 10 degrees below the room temperature this schedule changes to

45	28	72	70	68.46
50	33	67	70	69.73
55	40	60	70	72.50
60	50	50	70	77.60
65	67	33	70	81.03

It would appear, from the second tabulation, to be impossible to get the humidity of 63.9 grains per pound required without going below 45 deg. Fahr. in the washer. It must not be forgotten, however, that with air 10 degrees below the room temperature, 50 per cent more air will be required to carry off the same amount of heat so that the 14 grains per pound in the second case would be distributed into a greater amount of air making the grains added per pound 14 grains / 150 per cent, or 14 × 150/100, which is an addition of only 9.33 grains per pound. Therefore the supply air going to the room would contain the absolute room humidity of 77.9 grains minus 9.33 grains added in the room, or 68.57 grains. This indicates a washer air temperature slightly over 45 deg. Fahr.

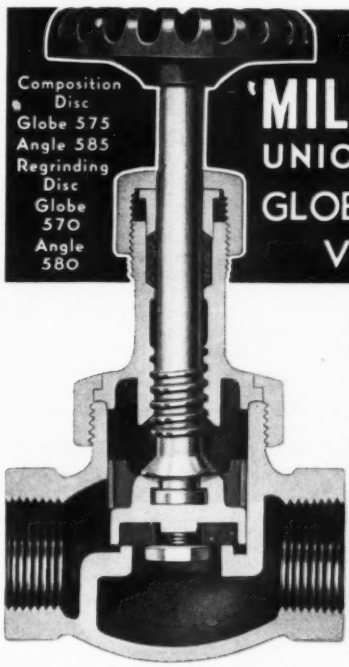
A comparison between the by-passing idea and the non-by-passing scheme is interesting and instructive. Assume that an air supply at 65 deg. Fahr. is furnished to a room in which 14 grains per pound are added to the air and where it is desired to maintain 80 deg. Fahr. and 50 per cent relative humidity at a time when the outside is at 95 deg. Fahr. and 50 per cent relative humidity, and that 25 per cent of outside air is being used and that 1,000 lb. of air per minute as a total supply will be used for experiment.

This gives the following:

Item	Outside Air	Supply Air	Recirc. or Room Air
Temp. F	95	65	80
Humid., per cent	50	69	50
Humid. Abs. Gr.	128	64	78
Per cent of Air	25	100	75
Grains Removed	64	0	14
Temp. in A. W.			
By-passing	46		
Non-by-passing	55		

In the case of non-by-passing of the air washer and with 1,000 lb. of air per minute as a total, the cooling load becomes

$$\frac{\text{Outside Air}}{25\% \times 1{,}000 \text{ lb.} \times (95^\circ \text{ F.} - 55^\circ \text{ F.}) \times 0.24}{200 \text{ Btu.}} \text{ or } 12.0 \text{ tons}$$



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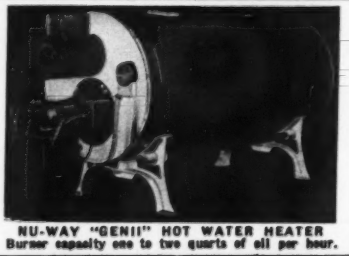

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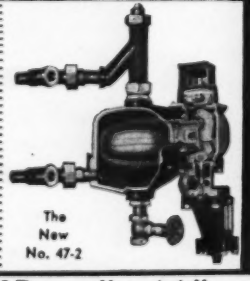

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$$\frac{75\% \times 1{,}000 \text{ lb.} \times (80^\circ \text{ F.} - 55^\circ \text{ F.}) \times 0.24}{200 \text{ Btu.}} \text{ or } 22.5 \text{ tons}$$

and the dehumidifying load becomes

Outside Air

$$\frac{25\% \times 1{,}000 \text{ lb.} \times (128 \text{ g.} - 64 \text{ g.}) \times 1{,}000}{200 \text{ Btu.} \times 7{,}000 \text{ g.}} \text{ or } 11.42 \text{ tons}$$

Recirculation Air

$$\frac{75\% \times 1{,}000 \text{ lb.} \times (78 \text{ g.} - 64 \text{ g.}) \times 1{,}000}{200 \text{ Btu.} \times 7{,}000 \text{ g.}} \text{ or } 7.50 \text{ tons}$$

TOTAL REFRIGERATION REQUIRED 53.42 tons

In the case of by-passing the cooling load becomes

Outside Air

$$\frac{25\% \times 1{,}000 \text{ lb.} \times (95^\circ \text{ F.} - 46^\circ \text{ F.}) \times 0.24}{200 \text{ Btu.}} \text{ or } 14.70 \text{ tons}$$

Recirculated Air

$$\frac{(44\% - 25\%) \times 1{,}000 \text{ lb.} \times (80^\circ \text{ F.} - 46^\circ \text{ F.}) \times 0.24}{200 \text{ Btu.}}$$

or 7.75 tons

while the dehumidifying amounts to

Outside Air

$$\frac{25\% \times 1{,}000 \text{ lb.} \times (128 \text{ g.} - 46 \text{ g.}) \times 1{,}000}{200 \text{ Btu.} \times 7{,}000 \text{ g.}} \text{ or } 14.64 \text{ tons}$$

Recirculation Air

$$\frac{(44\% - 25\%) \times 1{,}000 \text{ lb.} \times (78 \text{ g.} - 46 \text{ g.}) \times 1{,}000}{200 \text{ Btu.} \times 7{,}000 \text{ g.}}$$

or 4.3 tons

TOTAL REFRIGERATION REQUIRED 41.39 tons

Saving in Refrigeration Load by using by-passing
53.42 tons — 41.39 tons or 12.03 tons.

Saving in Steam per minute by using by-passing

$$\frac{1{,}000 \text{ lb.} \times (65^\circ \text{ F.} - 55^\circ \text{ F.}) \times 0.24 \text{ Btu.}}{1{,}000 \text{ Btu.}} \text{ or } 2.4 \text{ lb.}$$

Boiler horsepower required

$$\frac{2.4 \text{ lb.} \times 60}{30 \text{ lb.}} \text{ or } 4.8 \text{ B.h.p.}$$

METHOD OF DETERMINING WASHER TEMPERATURE

There also is a method of determining the washer temperature as well as the amount of air by-passing and going through the washer simply by the use of equations and without going to the extent of calculating all the different conditions occurring for various washer temperatures. This method is based on the fact that the air issuing from the washer is saturated and, on account of being saturated, has a dry bulb, wet bulb and dew point all at the same temperature.

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Let X per cent represent the percentage of air passing through the washer
Y per cent represent the per cent of air by-passing the washer
Wt the washer temperature of air; also equals Wdp
Rt the recirculation temperature of air
Rdp the recirculation (or room) dew point temperature of the air
Wdp the washer dew point temperature of the discharge air; also equals Wp
St the supply air dry bulb temperature required
Sdp the dew point temperature of the supply air required

Then

(a) Rt × Y per cent plus Wt × X per cent equals St × 100 per cent

and

(b) Rdp × Y per cent plus Wt × X per cent equals Sdp × 100 per cent

or

(if one equation is substracted from the other)

(c) Rt × Y per cent minus Rdp × Y per cent equals St minus Sdp

In last issue the temperature of the supply air was 65 deg. Fahr. with 71 grains as the desired absolute humidity and the room or recirculation air was at 80 deg. Fahr. and had 78 grains absolute humidity and the dew point of the supply air is about 57½ deg. Fahr. while the dew point of the recirculation is about 60 deg. Fahr.

Substituting these for the symbols in (c) gives

(d) 80 deg. Fahr. × Y per cent minus 60 deg. Fahr. × Y per cent equals 65 deg. Fahr. minus 57½ deg. Fahr.

or

20 Y per cent equals 7½ deg. Fahr.

or

Y per cent equals 7.5/20

or

Y per cent equals 37

which indicates that about 37 per cent of the air must by-pass the washer to meet the conditions set up and if 37 per cent of the air by-passes, the balance, or 100 per cent minus 37 per cent or 63 per cent must pass through the washer. This checks very closely with the result obtained from the curves in Fig. 1 where it was considered that 63½ per cent passed through the washer.

To proceed now to the washer temperature it is known that

(e) Rt × 37 per cent plus Wt × 63 per cent must equal St or 65 deg. Fahr.

and substituting

80 deg. Fahr. × 37 per cent plus Wt × 63 per cent equals 65 deg. Fahr.

or

29.6 plus 0.63 × Wt equals 65 deg. Fahr.

or

0.63 Wt equals 65 minus 29.6

or

0.63 Wt equals 35.4

and

Wt equals 35.4/0.63 or 56.2 deg. Fahr.

as against 56 deg. Fahr. obtained previously by reading the curve.

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Fig. C-152

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¾" I.P.S. Male Inlet x ¾" Hose Outlet

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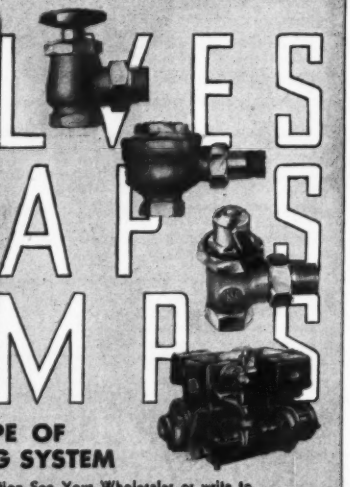

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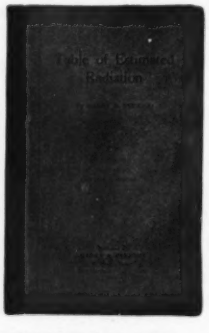

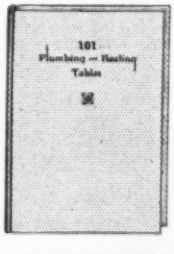

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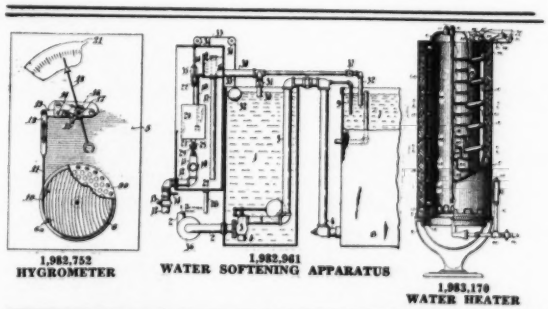

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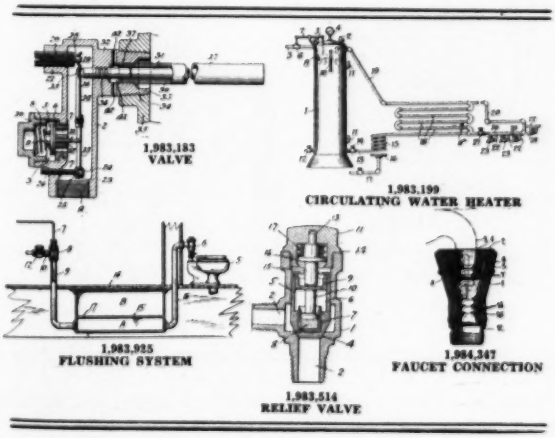

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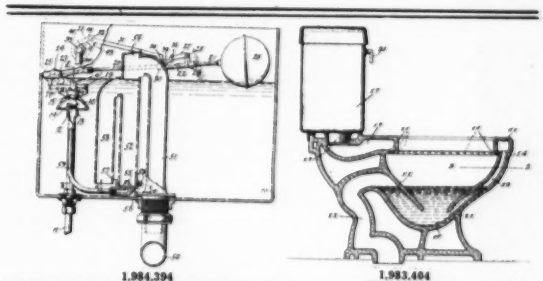

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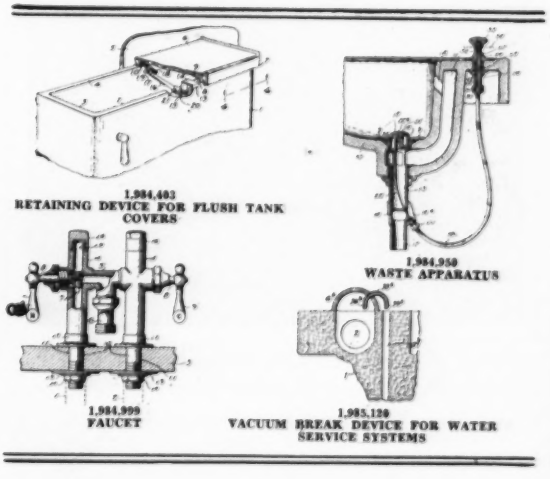

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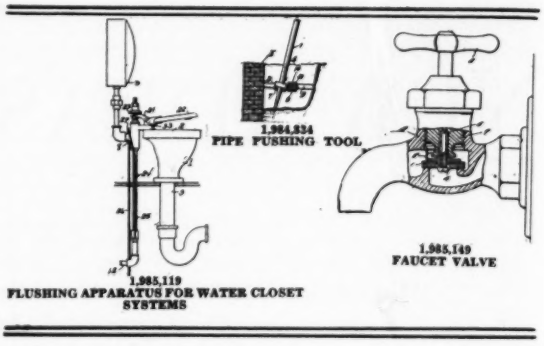
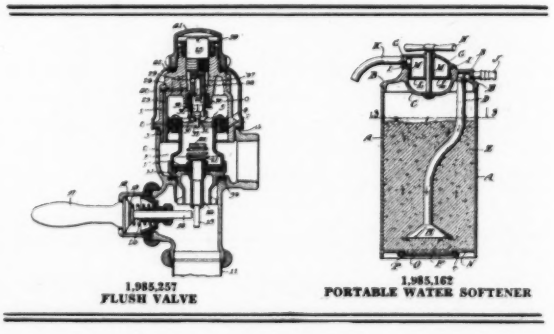


1,984,834. Pipe Pushing Tool. Joseph Peter Koenig, Kalamazoo, Mich.

1,985,149. Faucet Valve. Charles Edwin Chapple, Batavia, N. Y.

1,985,257. Flush Valve. Emil J. Kocour, Chicago, Ill., assignor to Sloan Valve Company, Chicago, Ill., a corporation of Illinois.

1,985,162. Portable Water Softener, Richard L. Gilles, Fargo, N. Dak.



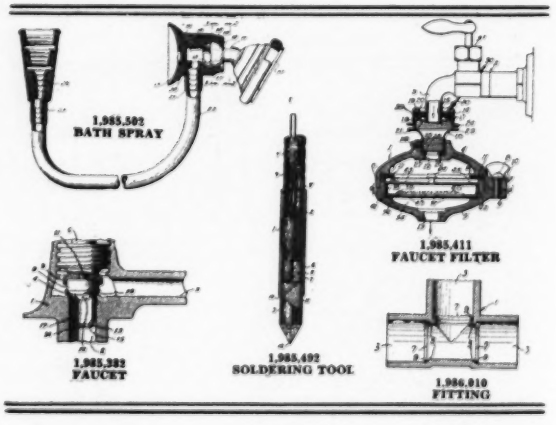
1,985,502. Bath Spray. Stanley Isenberg, Chicago, Ill.

1,985,382. Faucet. Nathan Schachter, Chicago, Ill.

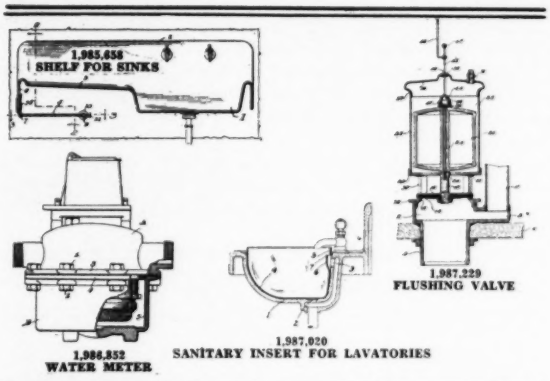
1,985,411. Faucet Filter. John D. Hauck, Chicago, Ill.

1,985,492. Soldering Tool. William J. Frohmuth and Donald E. Cohagen, Fort Wayne, Ind.

1,986,010. Fitting. John Elmer O'Laughlin, Milwaukee, Wis., assignor to Mueller Brass Company, Port Huron, Mich., a corporation of Michigan.



1,985,658. Shelf for Sinks. Arthur C. Heise and Millard W. Jacobi, Baltimore, Md.



1,987,229. Flushing Valve. Frank G. Curtin, Medford, Mass.

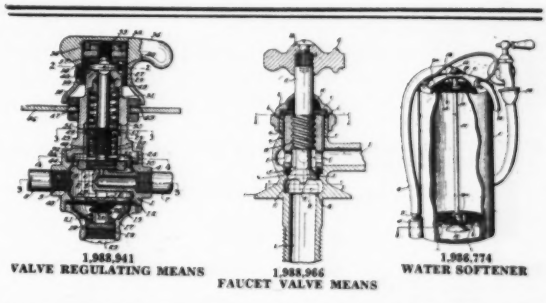
1,986,852. Water Meter, Philip A. Potter, Hohokus, N. J.

1,987,020. Sanitary Insert for Lavatories. Otto Looft, Tracy, Calif., assignor, by direct and mesne assignments, of fifteen per cent to Fred Baumen and ten per cent to Jackob Taner, both of Tracy, Calif., and five per cent to Frimo P. Cianettoni, Banta, Calif.

1,988,941. Valve Regulating Means. David H. Ebinger, Columbus, Ohio.

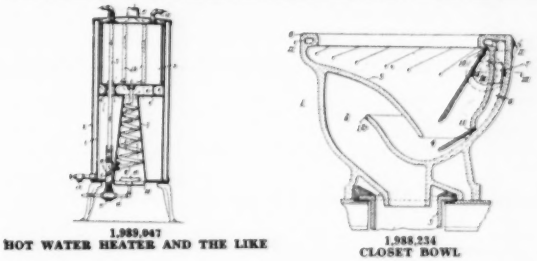
1,988,966. Faucet Valve Means. Edgar A. Eckhouse, Cleveland Heights, Ohio.

1,986,774. Water Softener. Ferdinand L. Hapfer, St. Paul, Minn., assignor of one-third to Arthur E. Lux, White Bear Lake, Minn., and one-third to W. J. Lux, St. Paul, Minn.



1,989,047. Hot Water Heater and the Like. Robert P. Wilson, Fort Worth, Texas.

1,988,234. Closet Bowl. George Brain, Tiffin, Ohio, assignor to Standard Sanitary Manufacturing Company, a corporation of New Jersey.



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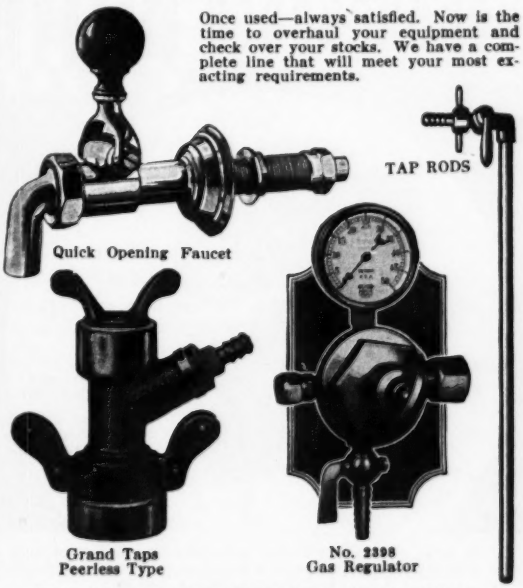

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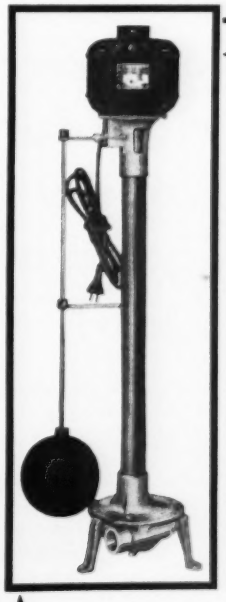

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40"	70 lb.	3000	2400	1900	1300	600

$35.00 F.O.B. Factory
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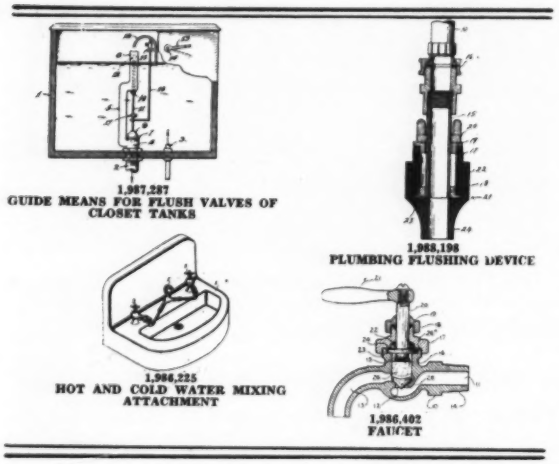
1,987,287. Guide Means for Flush Valves of Closet Tanks. Richard O. Donnelly, Peoria, Pa.

1,988,198. Plumbing Flushing Device. Arthur J. German, Detroit, Mich., assignor to Alger R. Reno, River Rouge, Mich.



1,986,225. Hot and Cold Water Mixing Attachment. Myer Sefkin, Rochester, N. Y.

1,986,402. Faucet. Edward Kirkpatrick, Peoria, Ill.

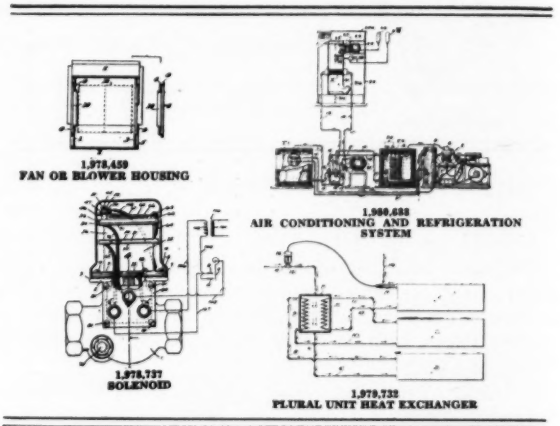
Heating Department

1,978,459. Fan and Blower Housing. Chester P. Hegan, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware.

1,980,688. Air Conditioning and Refrigeration System. Carroll E. Lewis, Minneapolis, Minn., assignor, by mesne assignments, to Lewis Air Conditioners, Inc., Minneapolis, Minn., a corporation of Delaware.

1,978,737. Solenoid. George D. Bower, Columbia Heights, and Willis H. Gille, St. Paul, Minn., assignors to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.

1,979,732. Plural Unit Heat Exchanger. William W. Carson, Jr., Knoxville, Tenn., assignor to The Fulton Sylphon Company, Knoxville, Tenn. a corporation of Delaware.



1,981,159. Air Conditioner. John C. Wichmann, Chicago, Ill.

1,978,705. Remote Control for Vacuum Heating System. Francis Fillo, St. Louis, Mo., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.

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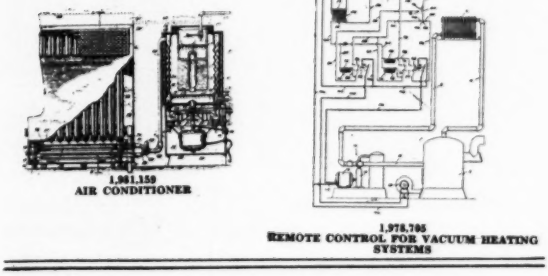
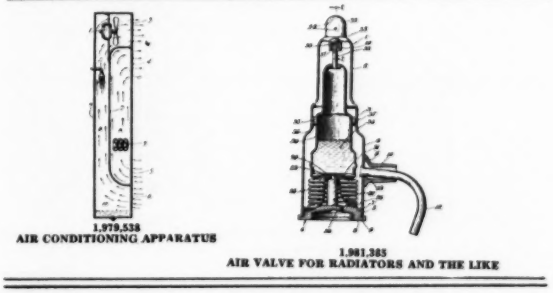


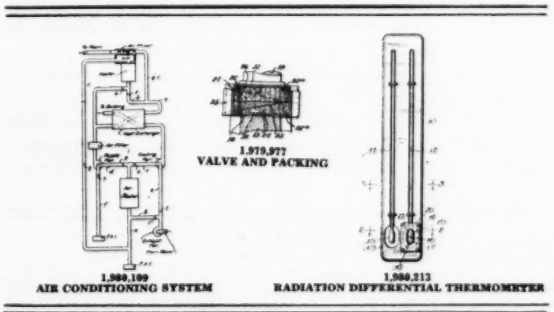
1,979,538. Air Conditioning Apparatus. Ernest Fisher, St. Louis, Mo.

1,981,365. Air Valve for Radiators and the Like. William F. Macdonald, Bridgeport, Conn., assignor to Bridgeport Brass Company, Bridgeport, Conn., a corporation of Connecticut.



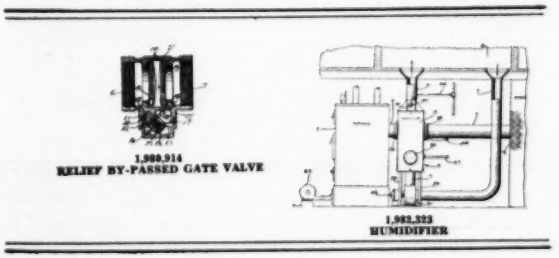
1,979,977. Valve and Packing. Jesse C. Martin, Jr., Los Angeles, Calif., assignor to Walworth Patents, Inc., Boston, Mass., a corporation of Massachusetts.

1,980,109. Air Conditioning System. Harold A. Stockly, Alhambra, Calif.

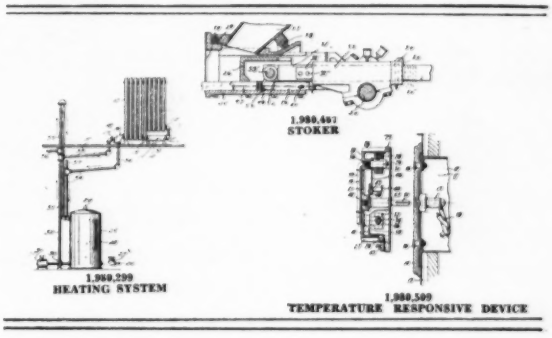


1,980,213. Radiation Differential Thermometer. Harvey B. Lindsay, Chicago, Ill.

1,982,323. Humidifier. Edward H. Roberts, Minneapolis, Minn., assignor, by mesne assignments, to Minneapolis Air Conditioner Company, Minneapolis, Minn., a corporation of Minnesota.



1,980,914. Relief By-Passed Gate Valve. Valentine Fina, Milwaukee, Wis., assignor to Milwaukee Valve Company, Milwaukee, Wis., a corporation of Wisconsin.



1,980,467. Stoker. Royce L. Beers, Detroit, Mich., assignor to Detroit Stoker Company, Detroit, Mich., a corporation of Michigan.

1,980,299. Heating System. George C. Smith, Hamilton, Ontario, Canada.

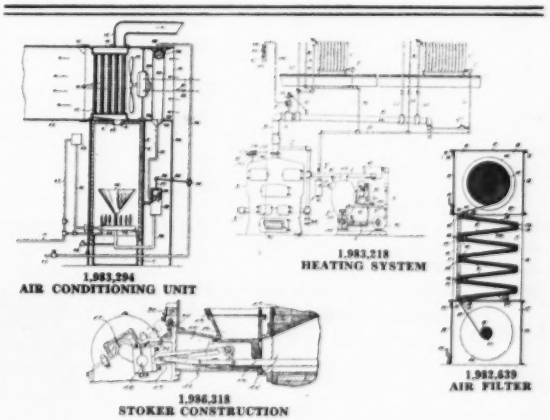
1,980,509. Temperature Responsive Device. George A. Tuck, San Francisco, Calif., assignor to Atlas Heating and Ventilating Co., Ltd., San Francisco, Calif., a corporation of California.

1,983,294. Air Conditioning Unit. Philip Hutten Miller, Cincinnati, Ohio.

1,983,218. Heating System. Clayton A. Dunham, Glencoe, Ill., assignor to C. A. Dunham Company, Marshalltown, Iowa, a corporation of Iowa.

1,986,318. Stoker Construction. Royce L. Beers, Detroit, Mich., assignor to Detroit Stoker Company, Detroit, Mich., a corporation of Michigan.

1,982,639. Air Filter. Charles Christofferson, Duluth, Minn., assignor to Universal Air Filter Corporation, Duluth, Minn., a corporation of Minnesota.



1,988,809. Temperature Control System. Joseph E. Robb, Topeka, Kans., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.

1,982,686. Unit Heater and Control Mechanism Therefor. Richard H. Nelson, Moline, Ill., assignor to The Herman Nelson Corporation, Moline, Ill., a corporation of Illinois.

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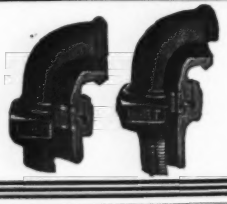

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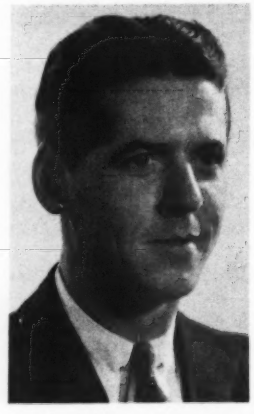

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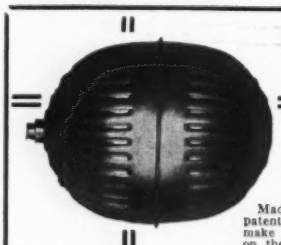

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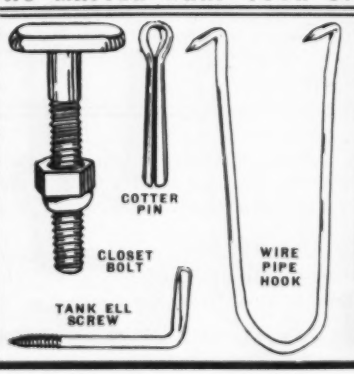

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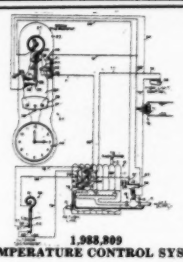
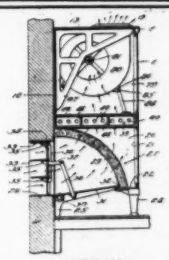


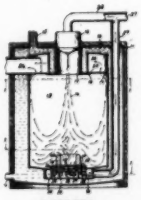
1,983,809
TEMPERATURE CONTROL SYSTEM



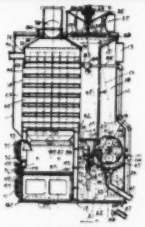
1,982,686
UNIT HEATER AND CONTROL MECHANISM THEREFOR

1,983,386. Combustion Arrangement for Oil Burners. Peter L. Mikeska, Schenectady, N. Y., assignor to General Electric Company, a corporation of New York.

1,983,620. Air Heating and Conditioning System. Jesse Noble Lewellen, Indianapolis, Ind.



1,983,386
COMBUSTION ARRANGEMENT FOR OIL BURNERS



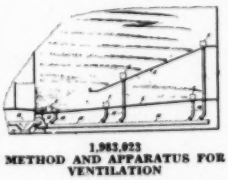
1,983,620
AIR HEATING AND CONDITIONING SYSTEM

1,983,623. Method and Apparatus for Ventilation. Walter L. Fleisher, New York, N. Y., assignor to Auditorium Conditioning Corporation, New York, N. Y., a corporation of New Jersey.

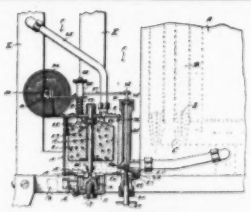
1,983,112. Regulator for Oil Burners. George W. Whitehurst, Portsmouth, Va.

1,983,120. Humidifying Radiator. Julius L. Cable, Boston, Mass., assignor, by mesne assignments, to American Moistening Company, Providence, R. I., a corporation of Maine.

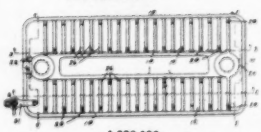
1,983,029. Oil Heating Apparatus. Ira Walton Henry, Greenwich, Conn., assignor to Ionizing Corporation of America, New York, N. Y., a corporation of New York.



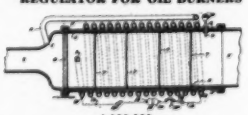
1,983,023
METHOD AND APPARATUS FOR VENTILATION



1,983,112
REGULATOR FOR OIL BURNERS

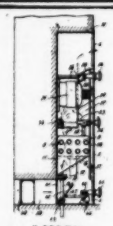


1,983,120
HUMIDIFYING RADIATOR

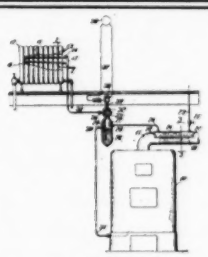


1,983,029
OIL HEATING APPARATUS

1,983,711. Radiator Type Air Conditioning Apparatus. Horace L. Smith, Jr., and Lucian N. Jones, Richmond, Va., assignors to Thermal Engineering Corporation, Richmond, Va., a corporation of Virginia.



1,983,711
RADIATOR TYPE AIR CONDITIONING APPARATUS

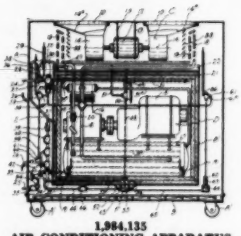


1,983,753
HUMIDIFYING SYSTEM

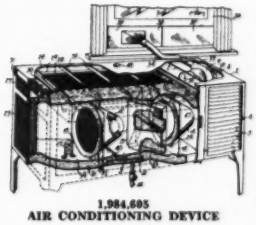
1,983,753. Humidifying System. Carl Hagen; Park Ridge, Ill.

1,984,135. Air Conditioning Apparatus. Albert J. R. Houston, Omaha, Nebr.

1,984,605. Air Conditioning Device. John J. Strang and Emile P. Brus, Kansas City, Mo., assignors to Strang Air Conditioning Corporation, Kansas City, Mo., a corporation of Missouri.



1,984,135
AIR CONDITIONING APPARATUS

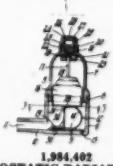


1,984,605
AIR CONDITIONING DEVICE

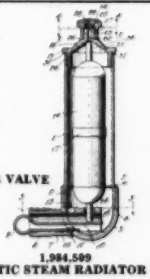
1,984,137. Fuel Oil Burner. Martin J. Kelly, New Britain, Conn.

1,984,402. Thermostatic Radiator Valve. Edward J. Donnelly, Everett, Mass.

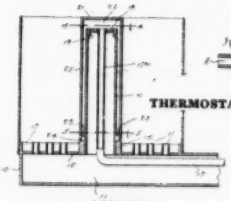
1,984,509. Automatic Steam Radiator Valve. William Oscar Wingard, Irvington, N. J.



1,984,402
THERMOSTATIC RADIATOR VALVE



1,984,509
AUTOMATIC STEAM RADIATOR VALVE



1,984,137
FUEL OIL BURNER

1,984,658. Air Conditioning Machine. Alfred E. Rourke, San Francisco, Calif., assignor of one-half to Walter G. Abbott, San Francisco, Calif.

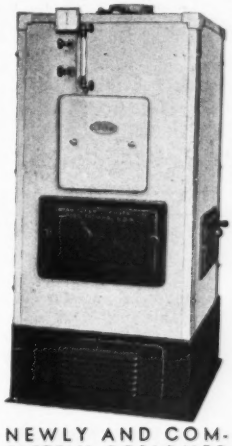
1,984,866. Air Humidification Apparatus. Vincent S. Day, Summit, N. J., assignor, by mesne assignments, to Carrier Engineering Corporation, Newark, N. J., a corporation of New York.

1,985,050. Air Conditioning System. André Merle, New York, N. Y., assignor of one-half to Ernest Williams, Scarsdale, N. Y.

GREATER FUEL ECONOMY

coal — oil — gas

Bryan Universal Boiler



Revolutionary

AS it meets every demand for proper combustion of fuels, quick absorption of heat developed, also easy and practical setting of every type of burner or stoker.

NO BOILER CHANGES

If you change fuels no makeshifts of any kind.

NEWLY AND COMPLETELY DESIGNED on basis of high efficiency —quick heat—any fuel.

A Wonderful Boiler

BRYAN STEAM CORP., PERU, IND.

PENNSYLVANIA RANGE BOILERS

The Plumber and The Lady
Act I
Lady: "Is this boiler likely to leak?"
Plumber: "No Ma'am. The seams are crimped before it is rolled into shape. The all-welded joints are actually stronger than the metal around them. You'll never have to worry about a Pennsylvania Range Boiler."

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The Attractive
"LUCKY STRIKE"
Counter Display
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Business that's RIGHTFULLY the Plumber's

For plumbing materials of all kinds, the plumber is the only *logical* source of supply. So that he may meet competition from all other sources and to help him educate his trade to the wisdom and economy of buying supplies from him, the "LUCKY STRIKE" assortment has been priced *low*. This attention-compelling display keeps "LUCKY STRIKES" moving. Consists of 36 cellophane front 2-color boxes. Each box contains 10 bevelled asbestos compound washers (5 sizes) and brass screws (3 sizes). Write for name of nearest jobber.

LAVELLE RUBBER COMPANY
318 WEST ILLINOIS ST. CHICAGO, ILL.

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With the ROPER line of LOW PRICE QUALITY BUILT Water Systems

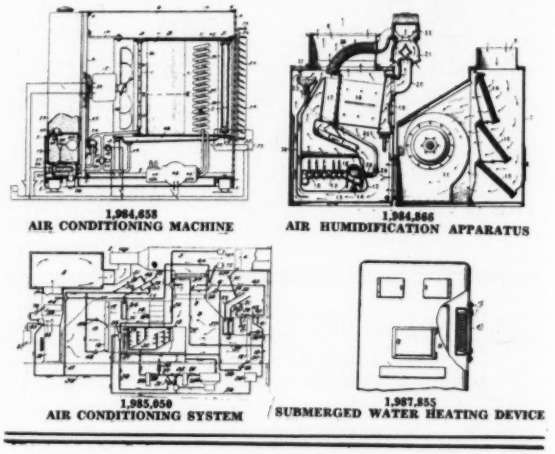
Every investigation of farm and country home needs that has been conducted during the past year has revealed a tremendous market for water systems. With increased purchasing power comes increased sales . . . get in on this business with popular priced, quality systems that will bring home the bacon. Roper Water Systems outvalue competition . . . and the prices are down where they mean business.

WRITE FOR BULLETIN W3D

Geo. D. Roper Corp., Rockford, Ill., U.S.A.

ROPER

You Can Get the Type of Water Systems You Want to Sell . . . From ROPER



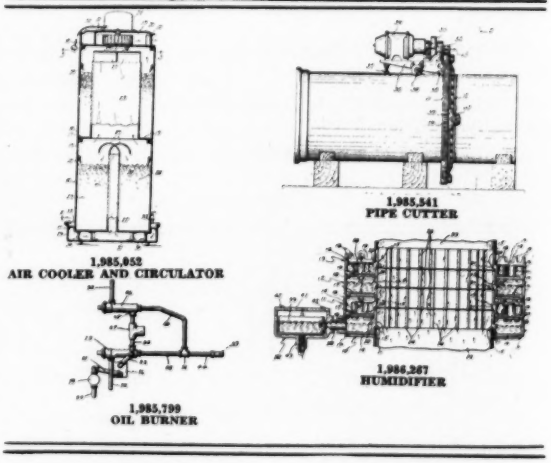
1,987,855. Submerged Water Heating Device. Forrest A. Johnson, Chicago, Ill., assignor to Bell & Gossett Company, Chicago, Ill., a corporation of Illinois.

1,985,052. Air Cooler and Circulator. Arthur B. Modine, Racine, Wis., assignor to Modine Manufacturing Company, Racine, Wis., a corporation of Wisconsin.

1,985,541. Pipe Cutter. Harrison B. Hoefer, Milwaukee, Wis.

1,985,799. Oil Burner. Frederick W. Schiefele, Audubon, N. J.

1,986,267. Humidifier. Leroy W. Hoyt, Stamford, Conn.



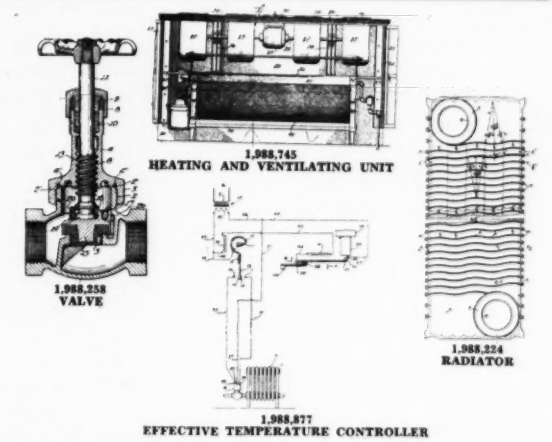
1,983,205. Stainless Copper Base Alloy. Richard A. Wilkins, Rome, N. Y., assignor to Revere Copper and Brass Incorporated, Rome, N. Y., a corporation of Maryland. Stainless hot and cold workable so-called white metal alloys containing copper, nickel, chromium, manganese and zinc, the copper, nickel, chromium and manganese being within the following approximate ranges: Copper 65 to 90%, nickel 5 to 22%, chromium 0.5 to 5%, and manganese 0.25 to 5%; in all instances the sum of the copper and nickel being between approximately 80 and 95% and a substantial amount of zinc being present, the zinc constituting substantially the balance of the alloy in respect to the other metals mentioned.

1,988,258. Valve. Farnham Yardley, West Orange, N. J., assignor to Jenkins Bros., New York, N. Y., a corporation of New Jersey.

1,988,745. Heating and Ventilating Unit. Richard H. Nelson, Moline, Ill., assignor to The Herman Nelson Corporation, Moline, Ill., a corporation of Illinois.

1,988,224. Radiator. Otto G. Wendel, Buffalo, N. Y., assignor to The American Radiator & Standard Sanitary Mfg. Company, New York, N. Y., a corporation of Delaware.

1,988,877. Effective Temperature Controller. Paul F. Shivers, Wabash, Ind., assignor to Minneapolis-Honeywell Regulator Company Minneapolis, Minn., a corporation of Delaware.



1,988,258 VALVE

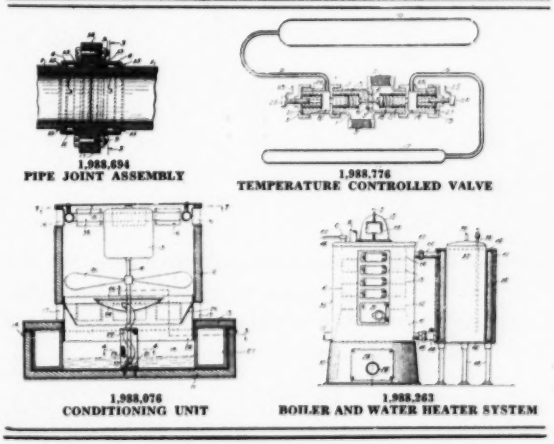
1,988,745 HEATING AND VENTILATING UNIT

1,988,224 RADIATOR

1,988,877 EFFECTIVE TEMPERATURE CONTROLLER

1,988,694. Pipe Joint Assembly. Paul D. Mallay, Larchmont, N. Y., assignor to Johns-Manville Corporation, New York, N. Y., a corporation of New York.

1,988,776. Temperature Controlled Vave. Victor A. Berghoefer, Milwaukee, Wis., assignor to Sterling Engineering Company, Milwaukee, Wis., a corporation of Wisconsin.



1,988,694 PIPE JOINT ASSEMBLY

1,988,776 TEMPERATURE CONTROLLED VALVE

1,988,076 CONDITIONING UNIT

1,988,263 BOILER AND WATER HEATER SYSTEM

1,988,076. Conditioning Unit. Walter L. Fleisher, New York, N. Y.

1,988,263. Boiler and Water Heater System. Thomas D. Casserly, Michigan City, Ind., assignor to Weil-McLain Company, Michigan City, Ind., a corporation of Delaware.

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Quality Merchandise DOES MOST TO STIMULATE Consumer Confidence

5" Round Float

4"x5" Oval Float

Incorporated 1907

THE AYLING & REICHERT CO.

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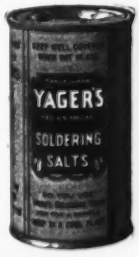
When you use YAGER'S Soldering Salts you help yourself to a greater profit on every job requiring the use of solder. YAGER'S enables you to do a BETTER job in far less time. It is inexpensive . . . it is easy to use . . . and it goes further. Thousands of other plumbing contractors swear by YAGER'S. After you try it you will too. Write for sample can and put it to the test.



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THE "MODERN" RANGE BOILER

Pat. No. 1853949

30, 40 and 50 Gallons

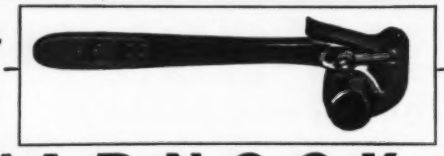
200, 250 and 300 lb. Test

In the above capacities the top and body of the "Modern" Boiler is formed from a single extra-heavy Copper Shell and drawn cold-seamless to the bottom, thus eliminating the top joint and the side seam and leaving only a bottom joint. The bottom head is hydraulically pressed on the shell and riveted securely with Copper Rivets closely spaced. Over the rivets a seamless copper band is spun and sweated, reinforcing the joint and making a solid construction which is impossible to come apart under any circumstance. Every boiler is reinforced internally and guaranteed against collapse. The interior is thoroughly tinned.

Sold Through Wholesalers Only

HAYES MFG. CO., Paterson, N. J.

Established 1870



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Triple Wear Wrenches

The Warnock wrench is easy to adjust. The strap is arranged in such a way that it can be drawn absolutely tight in *one* movement. Notice, too, that this strap is triple folded at the point of greatest strain.

For chrome, brass and nickel plated pipe

WARNOCK MFG. CO., Worcester, Mass.

The
Reseating Set You Need!

List Price
$11.45

SPECIAL OFFER
Spring—1935
25 Seats FREE with Every Set Purchased

Operates quickly and easily. Reseats practically any type of compression faucet in a few minutes.

Set includes:

1 reamer; 5 combination guides; 4 sizes self-feeding cutters; 2 insert keys; 12 assorted seats and 1 flashlight—31 pieces packed in a handy metal box. Plumbers find this set a real time-saver and money-maker.

Free demonstration by your local distributor. If he cannot furnish, write to:

CHICAGO SPECIALTY MFG. CO.
332-334 N. Western Ave., Chicago, Ill.

Your Stay in Buffalo

will be more restful, more convenient, more economical if you live at the HOTEL LENOX. Quiet location, 5 minutes from downtown. Comfortable rooms. Splendid meals. Satisfying service. Rates: $1.50 to $3.00 per day per person.

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140 NORTH ST. NEAR DELAWARE

CLARENCE A. MINER, President

Why Be Satisfied With an Ordinary Hotel?

THE
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Offers More in Comfort, Convenience and Economy . . . **RATES from $3**

The smallest unit is a living room with comfortable twin door beds, and a large dressing room, kitchenette with Frigidaire and bath with tub and shower. Rates include complete hotel service.

ON BEAUTIFUL ST. CHARLES AVE.

NEW ORLEANS, LA.

Newark—

(Continued from Page 41)

hangers on ducts are wrapped with similar material for a distance of 18 in. from the duct to prevent the possibility of sweating should cooling be installed.

Covering is applied to the different duct systems as follows: on the general supply and the shop supply, beginning with the air washer and continuing from the washer (which is covered) to the outlet grille or fixture in the room, and on the corresponding exhaust system on the shop exhausts from the room outlet as far back as the fan. This is covered as described above. The exhaust for the general supply is not covered as there is no intention of ever using cooling in the rooms served by this system.

The ducts in connection with the toilet exhaust, taxi exhaust, bus exhaust, battery charging room exhaust and the transformer room exhaust are not covered. The kitchen exhaust is covered from the room outlet back to the point where the air is discharged from the building, with ½ in. asbestos sheets with broken joints and finished off with ½ in. of plastic asbestos with hard plaster finish. The interiors of all duct work on the toilet exhausts, the bus terminal exhaust and the taxi exhaust are painted with asphaltum paint. The covered duct work was painted with one coat of metallic paint and two coats of lead and oil paint before covering was applied.

The fans used are the latest design of the non-overloading type, having a very low maximum brake horsepower and a high efficiency. They are set on concrete foundations with a 4 in. by 6 in. timber frame under the fan to which the fan is bolted. The timber, in turn, is attached to the concrete by bolts set in the slab. Under the concrete slab, and all around the sides, light weight corkboard is used as shown in the detail given in Fig. 3. The limitations set for the fans are shown in the following:

Duct System Designation	Air c.f.m.	Static Pres. In. Water	Max. Speed r.p.m.	Max. Tip Speed f.p.m.	Max. Outlet Velocity f.p.m.	Normal Brake h.p.	Max. Brake h.p.
Gen. Sup.	61,360	1½	341	6,200	1,425	21.5	23.5
Shop. Sup	41,000	1½	417	6,150	1,460	14.8	15.1
Gen. Exh.	28,500	½	266	4,700	1,360	3.9	4.0
Shop Exh.	23,500	½	325	4,820	1,425	3.49	3.7
Toll Exh.	12,800	⅝	395	4,650	1,300	2.0	2.1
Kit. Exh.	16,900	½	387	4,900	1,485	2.32	2.5
Taxi Exh.	25,200	½	325	5,000	1,530	3.65	3.7
Ref. Exh.	4,400	½	658	4,500	1,380	0.59	0.6
Bat. Exh.	4,400	½	658	4,500	1,380	0.59	0.6
Trans. Exh. ...	6,000		725	Propeller Type			

It was found that the contractor was not only able to keep inside the above limits but in some cases was able to do slightly better.

The fans are driven by constant speed and four-speed motors suitable for 440 volt, three phase, 25 cycle current, the four-speed type being used on the general supply and exhaust, the shop supply and exhaust and the taxi exhaust, the balance of the fans running on constant speed. Only the three top speeds are used on the four-speed motors, these being 750, 500 and 375 r.p.m. Special starters and controllers are used on the four-speed motors which require starting and changing of speeds in

"compelled sequence" beginning at the lowest speed. That is, the motors can be started on the lowest speed and raised to ¾ speed and then to full speed and in reverse order back to stop but cannot be jumped from stop to ¾ speed or full speed, nor can they be changed from ½ to full speed or from full speed to ½ speed without going through the ¾ speed step on the way.

The motors are connected to the fans by means of V-belt drives in all cases except that of the transformer room propeller fan which is direct connected. The motors are installed on sound and vibration proof foundations in the same manner as specified for the fans.

MOTORIZED VALVES CONTROL HEATERS

Cast iron indirect heaters are used for warming the ventilation air. These consist of two rows in the preheater and two rows in the reheater made up of standard 72 in. sections on 5 in. centers, with 2,128 sq. ft. of heating surface in the preheater and also in the reheater for the general supply and 1,520 sq. ft. of heating surface in the preheater and also in the reheater for the shop supply. They are made up in stacks two wide by two high, each stack having 14 sections on the general supply and 10 sections on the shop supply. The bottom stacks rest on steel and a ½ in. steel plate is inserted between the upper and lower stacks.

Each row of heaters is supplied with steam which is controlled by a motorized valve electrically operated from thermostats located as follows:

The first row of the preheater on each set of supply apparatus is controlled from a potentiometer set in the outside air intake and arranged to turn steam on this row through the opening of the motorized valve whenever the outside temperature goes below 35 deg. Fahr.

The second row of the preheater is controlled by means of a potentiometer thermostat located at the outlet of the air washer and set to hold approximately 50 deg. Fahr. at this point. This potentiometer is provided with a 10 degree adjustment either above or below 50 deg. Fahr. so that any desired percentage of humidity may be obtained at the washer.

The first row of the reheater is controlled through a motorized valve operated by a potentiometer located in the air duct near the fan discharge and set to maintain 70 deg. Fahr. at this point with a 10 degree adjustment either way.

The second row of the reheater is controlled by a second potentiometer thermostat set in the duct adjacent to the thermostat controlling the first row and set to turn to the second row of the reheater whenever the air goes below a limit temperature of, say, 65 deg. Fahr.

Dampers on the fresh air intakes have been arranged to permit going onto recirculation later and consist of a total damper area of 168 sq. ft. on the general supply system and 132 sq. ft. on the shop supply system. These dampers are divided into two sections, the general supply damper being divided on a ratio of 50 per cent to 50 per cent and the shop supply damper being divided 25 per cent to 75 per cent. Both sections are operated by motorized valves which are controlled from manual switches for the present and are ready for connecting onto automatic control if recirculation and cooling are added later.

Standard 9 ft. air washers are used with double sprays opposed to the air flow, each group of sprays containing

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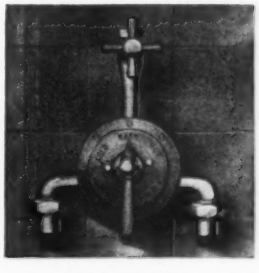
Auditorium hotel rooms are large, spacious and comfortable with beds that were really made for restful slumber.
WITH PRIVATE BATH FROM $2.50
WITHOUT PRIVATE BATH – $1.50
Live on Michigan Avenue, close to the Loop, when you visit Chicago. Enjoy the traditional luxury of the Auditorium Hotel–yours now at an extremely moderate cost.
Geo. H. Mink, Mgr.
AUDITORIUM Hotel
MICHIGAN AVENUE AT CONGRESS ST.


LEONARD
Thermostatic
WATER·MIXING VALVES
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QUALITY
ECONOMY
DURABILITY
QUALITY because of fine workmanship and materials. ECONOMY because of low first cost and upkeep. DURABILITY because of simple construction. Series T Water-Mixing Valves furnished for exposed piping only. Literature describing Series T and R Valves sent on request.
LEONARD ROOKE CO. INC. PROVIDENCE R.I.

5 nozzles per 1,000 c.f.m. of air handled. An independent set of 51 nozzles on the general system air washer and 35 nozzles for the shop air washer is used for washing down the eliminator plates and the washing surface is based on 16 sq. ft. of surface per 1,000 c.f.m. of air handled.

The washers are constructed of copper bearing galvanized steel plate braced with galvanized angle irons and are supplied with brass spray piping supported on galvanized cast iron manifolds. The gauge of metal used for the casing is No. 18 while the tank is made of No. 12 and the eliminators of No. 18 gauge.

D. T. U.—

(Continued from Page 38)

"Now you asked how we handle the 5, 10, 25 cent and dollar items. The answer is—chain store style—we display small items of every-day needs on a table counter, each item priced and convenient for customers to make selections. This is like a silent salesman that works without pay, and returns an excellent margin of profit. But perhaps what is of even more importance than all else, it serves as a constant reminder that, quality for quality, your prices are as low as any one's. Then, when it comes to buying the higher priced units, we are placed in a favorable position to get the order.

"As for competing with the big advertisers and cut price stores, Quality becomes your own best salesman. If you have in stock and on display only *one* grade, and that one the highest priced, you cannot hope to compete. Price, while a determining factor in the sale of any merchandise, becomes secondary when the Bargain in Quality, the Bargain in Satisfaction, the Bargain in Long Life and Ultimate Economy is demonstrated along beside of the lower priced material or finished product.

"That is why we carry leaders to show by comparison that quality for quality, our prices are in line, then the lower priced, inferior product helps immeasurably to sell the better and quality lines.

"We have proved that to our satisfaction, and the 40 per cent to 60 per cent ratio record over a period of years is the best answer I can give that the plumbing contractor can sell merchandise profitably, from the five cent rubber gadget up to and including the highest priced equipment needed and desired in the modern home."

As advertising and selling through the demonstration has been such an important factor in building up this business, a word about this contractor-dealer's trucks may hold both interest and value. A company service truck covers all parts of a city throughout nearly every day in the year. It is an advertisement for the firm—a good one with its neatly and attractively painted firm name shown on its sides and back. Its advertising value is still further enhanced by the service it can perform, namely, in the matter of interior arrangement for carrying spare parts, pipes, fittings and tools.

The Hokom Company's trucks carry such tools and parts as to enable the workmen to complete 90 per cent of all small repair jobs on the spot. The one trip plumber therefore becomes an actual possibility, and a lasting advertisement that makes for repeat orders and increased sales.

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Unusually Comfortable Rooms, Good Food, Carefully Prepared, and Rates from $2.50 Single

In Cleveland it's
The HOLLENDEN
RADIO IN EVERY ROOM

In Columbus it's
The NEIL HOUSE

In Akron it's
The MAYFLOWER

In Toledo it's
The NEW SECOR

In Miami Beach it's
The FLEETWOOD
An Exclusive Winter Resort Hotel

DeWitt Operated Hotels are located in the heart of their respective cities

CHICAGO'S
MOST IDEAL LOCATION FOR EXHIBITS, MEETINGS, CONVENTIONS

Hotel Sherman has a tremendous appeal to the business man visiting Chicago because of its interest, its versatility, its splendid central location, its fine food and its moderate rates.

Conventions and meetings of any size—whether large or small—find unusual features at Hotel Sherman. Available in the Exhibition Hall on the Mezzanine Floor are 39,000 square feet of exhibit space. Full details on request.

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SALESMEN WANTED: SALESMEN and specialty houses calling on acquainted plumbers to sell a new improved valve. Outstanding opportunity for permanent repeat business. Large commission. Protected territory. All territories open. Furnish references. Address Key 131-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

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ENGINEER, NOW ASSISTANT TO sales manager large district steam company. Twelve years' consulting experience including piping, heating, air conditioning. Want opportunity with contractor or manufacturer where technical and sales qualifications will help build business. Age thirty-seven. Address Key 141-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

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DISTRIBUTORS, JOBBERS, DEALERS, write us for details on our kerosene and gas automatic water heaters. Koil-Les Heater Co., Geneva, Illinois.

WANTED — MANUFACTURER'S REPresentative to handle our line of rubber items. These items are most attractive and are a splendid line for high class representation. Haupt Brothers, Fourth & Boyd Sts., Shamokin, Penna.

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WANTED—A YOUNG MAN WITH some capital and experience to take an interest in Plumbing, Heating and Sheet Metal Shop. A good opportunity for right man. In a town with bright future. Ill health reason for selling. Address Box 686, Ontario, Oregon.

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REPRESENTATIVES WANTED. ONE of the leading manufacturers of high and low pressure steel boilers desires representatives, commission basis, in selected territories. Address Key 144-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

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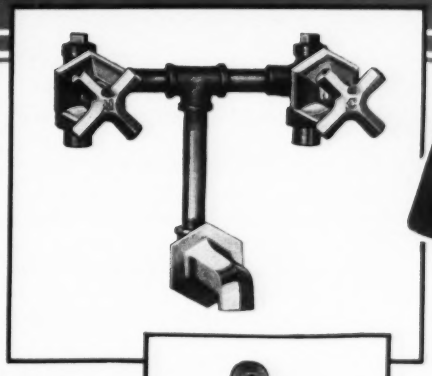

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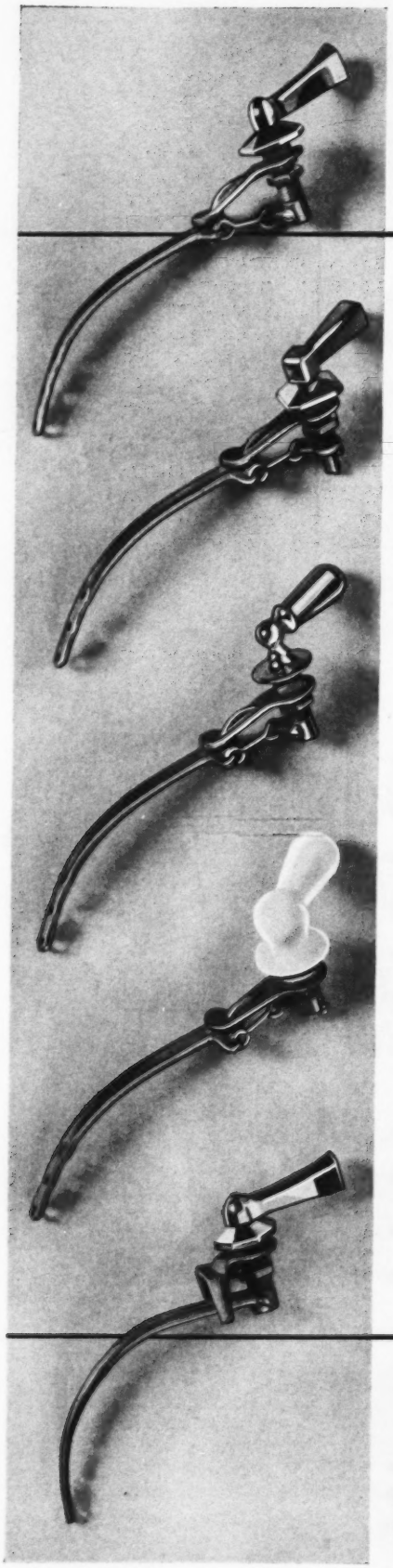

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